

**THE ROLE OF CAREGIVERS IN THE ACADEMIC PERFORMANCE
OF JUVENILES WHO SEXUALLY OFFEND**

by

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ABSTRACT

Background: Juveniles who sexually offend (JSO) face an uphill battle when trying to reintegrate into the school system following detention, incarceration or residential treatment. School reintegration is critical to restore the lives of these youth and their families. One way to facilitate a successful transition back into the school system is to involve caregivers. Research examining the role of parenting practices in improving the youth's academic performance is critical to support the reintegration of JSO into society.

Objectives: The purpose of this research is to understand how parenting practices influence youth outcomes in a sample of juveniles who sexually offended. In aim 1, we identified variations in parenting practices of JSO by demographic characteristics of caregivers. In aim 2, we determined if history of victimization moderated the relationship between parenting practices and delinquency. In aim 3, we explored if peer association mediated the relationship between parenting practices and delinquency. For aim 4, we determined how the relationship of parenting to grades varied by peer association.

Methods: For all four aims, we examined five parenting practices: communication, supervision, discipline, family adaptability and cohesion. In aim 1, we used linear regression models to determine if parenting practices differed by characteristics of the caregivers of JSO. For aims 2 and 3, analyses were conducted to understand how history of victimization (as a potential moderator) and peer association (as a potential mediator) affected the relationship between parenting and delinquency. Aim 4 used hierarchical regression models to explore the relationship of parenting and academic performance as moderated by delinquent and prosocial peer associations.

Results: In aim 1, we found that parenting practices differed by family structure (two-parent versus single-family households), caregiver education (less than high-school versus high-school degree), age, race/ethnicity (Black, non-Hispanic versus White, non-Hispanic) and relationship to youth (non-parental/non-relative caregiver versus mother). Additionally, the caregiver's relationship to the youth (father versus mother) was significantly associated with the youth's academic performance. In aim 2, history of poly-victimization (experiencing at least two types of abuse) moderated the relationship between supervision and general delinquency. In aim 3, we found that delinquent peer association mediated the relationship between family cohesion and general delinquency. Looking at trends in the data for aim 4, the overall pattern of findings suggest that youth association with delinquent peers is related to lower academic performance, regardless of the level of the communication, family cohesion, discipline, adaptability and supervision. Similarly, youth association with prosocial peers was related with better academic performance.

Conclusions: The results of these four sets of analyses provide evidence that parenting practices, and family cohesion and supervision in particular, are important in the context of juvenile sexual offending. This dissertation emphasizes the significance of the youth's history of victimization and peer association in relation to non-sexual offenses and academic performance. Therefore, any intervention to reintegrate JSO into schools should consider individual, peer and family-level contexts.

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CHAPTER 1: INTRODUCTION

Problem Statement

Juvenile offenders face an uphill battle when trying to reintegrate into the public school system following detention, incarceration or residential treatment. The scope of the problem is significant: nearly 100,000 juveniles are released from custody annually (Snyder, 2004) and are funneled back into the public school system. School reentry is associated with a gamut of challenges for youth and their families (Matvya, Lever, & Boyle, 2006), and the lack of coordinated efforts between the juvenile justice system and public schools further complicates the transition back to school (Richardson, DiPaola, & Gable, 2012). Owing to zero-tolerance policies, schools are often reluctant to re-enroll juvenile offenders after adjudication (American Psychological Association Zero Tolerance Task Force, 2008), limiting the youth's educational options. Even when the juvenile offender is re-enrolled into school, the academic challenges faced are formidable. Many of these academic challenges are exacerbated while the youth is incarcerated. For every year spent incarcerated, only 25% of juvenile offenders advance to the next grade level (Altschuler & Brash, 2004). The curriculum that the youth followed while in custody is often different from that offered in mainstream public schools, potentially leading to more academic challenges (Matvya et al., 2006). Another significant challenge for juvenile offenders is the transition from a treatment center or correctional facility, characterized by rigid rules and regulations, to a school setting that may not provide the structure or guidance that the adolescent needs to reintegrate successfully (Altschuler & Brash, 2004).

Juvenile offenders adjudicated for both contact and non-contact sexual offenses (a.k.a. juveniles who sexually offend or JSO) experience many of the same challenges to school reentry as do general offenders. JSO are frequently confronted with complex

problems known to predict poor school outcomes (Becker & Hicks, 2003), including low rates of school attendance and high school graduation (Veneziano & Veneziano, 2002), school behavior problems, school suspensions and expulsions (Waite et al., 2005) and social isolation (Miner & Munns, 2005). In addition to the challenges mentioned above, JSO are faced with stringent social control policies, including community notification, sex offender registration and residency restrictions (Caldwell & Dickinson, 2009). Recent studies of the unintended negative consequences of public notification for juveniles include stress, isolation, fear, shame and embarrassment (Garfinkle, 2003; Hiller, 1998; Young, 2008). The added stigma associated with the label of “sexual offender” is another obstacle to overcome (Craun & Kernsmith, 2006). Anecdotal reports suggest that youth registered on mandatory internet-based registries experienced physical and emotional harm, social isolation from peers and community members and interrupted schooling (Letourneau & Miner, 2005; Trivits & Reppucci, 2002). The stigma of being placed on such a registry can be traumatic for any youth who has to prove him/herself worthy of reintegration after being convicted of a sex crime.

Despite the hardships of life post-release, school reintegration is critical to restore the lives of juvenile offenders (both sex and non-sex offenders) and their families (Matvya et al., 2006). Re-engagement with the school system has been found to reduce recidivism of delinquent behaviors (Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice, 2004), and is also a cost-effective way to reintegrate juvenile offenders into society. Indeed, the costs of schooling are far lower than the costs of incarceration (Just Children, Legal Aid Justice Center, 2004). It is imperative to develop strategies to facilitate the transition of the youth back into the public school system.

One way to facilitate a successful transition is to involve caregivers in the treatment of juveniles who sexually offend and to focus on academic achievement while in treatment. Researchers have determined that good parenting can mitigate against the negative effects of delinquent peers association, delinquent behaviors and subsequent school failure (Simons, Whitbeck, Conger, & Conger, 1991). A number of studies have looked at the potential for involving parents in the treatment of the JSO (Borduin, Henggeler, Blaske, & Stein, 1990; Borduin, Schaeffer, & Heiblum, 2009; Henggeler et al., 2009; Letourneau et al., 2009). Henggeler et al. (1992) found that involving family in the treatment of serious juvenile offenders (including, but not limited to JSO) increased family cohesion, in turn contributing to fewer arrests, less time spent incarcerated, and decreased aggressive peer relations (Henggeler, Melton, & Smith, 1992). Involving caregivers in the treatment of JSO can empower them with skills and resources to address the challenges of bringing up adolescents with a history of sexually offenses (Letourneau et al., 2009).

The Current Study

This study is based on the premise that school success is an important step to a fuller re-integration of JSO into society. Our work will identify parenting practices that are associated with better academic performance of JSO, defined as grades relative to other students in the classroom. We will also consider the separate effect of peer association and youth victimization history on school and general non-sexual offenses. Parenting practices (both positive and negative) are skills that are developed over time and are often learned through modeling behaviors. Although parenting plays a key role in child development, we will also consider individual and peer-level factors that become more salient during adolescent years (Adams, 1995). We will consider non-sexual offenses in our study population since JSO are far more likely to commit subsequent general offenses than sexual

offenses (Caldwell, 2002; Worling & Curwen, 2000; Zimring, 2009). According to Caldwell (2010), JSO are 10 times more likely to recidivate with a non-sexual offense as compared to a sexual offense (Caldwell, 2010). For this reason, we deemed it important to examine general and school delinquency among this sample of JSO.

This dissertation, composed of four separate studies, will look at the associations between parenting practices of primary caregivers of JSO and: 1) caregiver demographics characteristics, 2) history of victimization (none, one type, more than one type of abuse) of JSO, 3) peer association (delinquent and prosocial peers), and 4) the academic performance of JSO. We believe that parenting practices can be improved with the proper support and training. Indeed, community-based interventions for JSO following adjudication or release from detention offer a unique opportunity for the caregiver to get involved in the youth's school reentry. Insight gained from this dissertation will highlight parenting strategies that need to be improved to help JSO succeed in school post-release.

This study addresses a clear gap in the literature. The currently available literature focuses on the problems associated with community reentry of delinquent youth (Altschuler & Brash, 2004; Braithwaite & Mugford, 1994; Chung, Schubert, & Mulvey, 2007; Douglas Young, 2004; Freudenberg, Daniels, Crum, Perkins, & Richie, 2005). There are some data available on community reentry of adults who sexually offend (Levenson & Cotter, 2005; Mercado, Alvarez, & Levenson, 2008). However, few studies have been undertaken on the topic of school reintegration of juvenile offenders (Richardson et al., 2012). While limited literature addresses ways in which caregivers can contribute to the treatment of JSO (Borduin et al., 1990; Borduin et al., 2009; Henggeler et al., 2009; Letourneau et al., 2009), no study looking at the impact of parenting strategies on academic performance of JSO was found to-date.

Specific Aims

Aim 1: To identify variations in parenting practices by demographic characteristics of primary caregivers of juveniles who sexually offend.

1.1: To determine how best to assess parenting practices using available youth and caregiver reports on multiple assessment instruments. Results from this aim will inform subsequent aims.

1.2: To determine if parenting practices differ by caregivers' age, gender, race/ethnicity, family structure, level of education and poverty status.

1.3: To determine if parenting practices differ by the relationship of the primary caregiver to the youth (mother/father/other).

Aim 2: To identify variations in parenting practices of the primary caregiver by history of victimization of juveniles who sexually offend.

2.1: To determine if history of youth victimization (none, one type, more than one type of abuse) moderates the relationship between parenting practices and delinquency (general and/or school delinquency).

Aim 3: To identify variations in parenting practices of the primary caregiver by peer association of juveniles who sexually offend.

3.1: To explore if delinquent peer association mediates the relationship between parenting practices and delinquency (general and/or school delinquency).

3.2: To explore if prosocial peer association mediates the relationship between parenting practices and delinquency (general and/or school delinquency).

Aim 4: To assess the relationship between parenting practices of the primary caregiver and academic performance of juveniles who sexually offend.

4.1: To determine if academic performance differs by caregiver's age, gender, race/ethnicity, family structure, level of education, poverty status and relationship to the youth.

4.2: To determine how the relationship of parenting to their child's academic performance varies by delinquent peer association, accounting for significant results from aim 4.1.

4.3: To determine how the relationship of parenting to their child's academic performance varies by prosocial peer association, accounting for significant results from aim 4.1.

Theoretical Framework

Socio-Ecological Approach

An adaptation of Bronfenbrenner's Ecological Systems Theory (Bronfenbrenner, 1979) provides a useful framework for understanding the complexity of juvenile delinquency (Gorman-Smith, Tolan, & Henry, 2000) and juvenile sexual offending (Swenson, Henggeler, Schoenwald, Kaufman, & Randall, 1998). Applied to JSO, this theory helps discern the various individual, family, school and peer level factors that affect sexually offensive behaviors (Henggeler et al., 1992). The ecological niche is related to juvenile sexual offending in two ways: 1) *distally*, meaning that adverse events occurring over the life-course negatively affect the psychology and neurobiology of youth, and 2) *proximally*, meaning that certain events occur that increase the likelihood of developing sexually offensive behaviors (Ward & Beech, 2006). The ecological niche is related to juvenile sexual offending in two ways: 1) *distally*, meaning that adverse events occurring early in a child's life-course negatively affect the psychology and neurobiology of youth, and 2) *proximally*, meaning that certain events occurring more recently in a child or adolescent's life course increase the likelihood of

developing sexually offensive behaviors (Ward & Beech, 2006). In striving to improve the academic outcomes of delinquent youth, it is likely more relevant to address more proximal factors, such as current parenting practices and current peer associations. Using the socio-ecological approach, this study will examine the relationship between the following variables and juvenile sexual offending: history of sexual, physical and/or emotional victimization at the individual level; communication, discipline, supervision, and family cohesion and adaptability at the family level; academic performance at the school level; and the youth's association with prosocial and delinquent peers at the peer level.

Attachment Theory

Attachment theory, as proposed by Bowlby, states that children need a secure and nurturing environment to develop normally, both socially and emotionally (Bowlby, 1969). Infants get attached to caregivers who are responsive, sensitive and constant in time. Under normal circumstances, a child develops an attachment system to regulate proximity to an attachment figure (Bowlby, 1969; Hankin & Abela, 2005). Adopting a diathesis-stress perspective, Bowlby argues that people with insecure attachments are more vulnerable to developing psychopathology: stressors enhance negative beliefs about the self and heighten negative beliefs about others (Bowlby, 1969). In the 1990s, Marshall developed a theoretical framework on adult sexual offending that integrates attachment theory. He argued that failure to achieve secure attachment during childhood can lead to poor interpersonal skills, low self-confidence, inability to achieve intimacy with peers, and ultimately sexual offending in adulthood (Marshall, Hudson, & Hodgkinson, 1993). Ward et al. broadened the attachment theory of adult sexual offending by explaining how different types of attachment styles correlate with different patterns of sexual offending (Ward, Hudson, Marshall, & Siegert, 1995). In 2005, Rich proposed a theoretical framework to understand how attachment

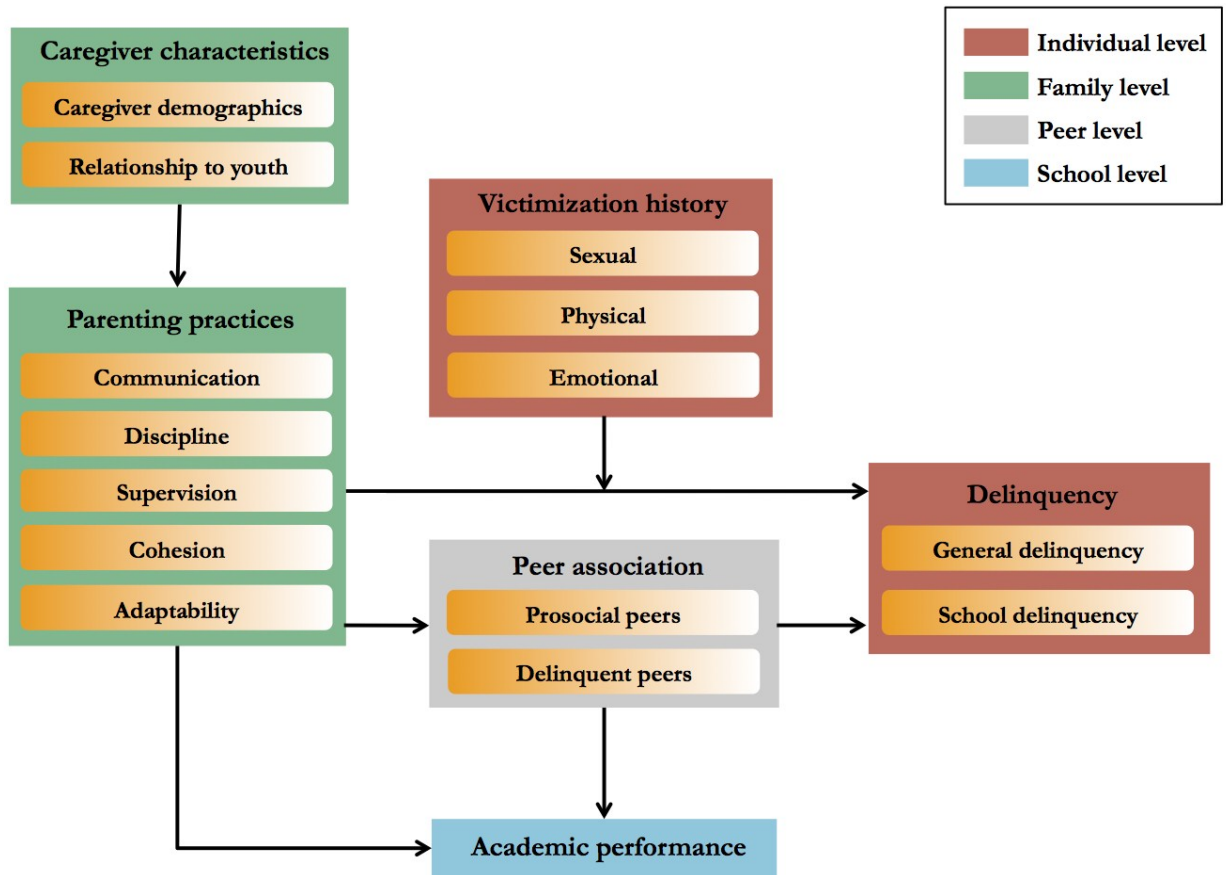
theory is applied to juveniles who sexually offend (Rich, 2005). Rich discussed in great depth how damaged attachment could contribute to sexually abusive behaviors. Using an attachment theory to inform the treatment of JSO, Rich discusses how re-forming attachment bonds with caregivers can help individuals become more socially engaged, more capable of engaging in self-regulation and less likely to further victimize others. Our work will be drawing on the attachment theory by looking at parenting practices of primary caregivers of JSO.

Conceptual Framework

Figure 1.1 represents the overall conceptual framework for this dissertation. Using elements of Bronfenbrenner's social ecological model (Bronfenbrenner, 1979) and Rich's application of the attachment theory to JSO (Rich, 2005), this dissertation will address individual (history of victimization, school/general delinquency), family (parenting practices and caregiver socio-demographic characteristics), school (academic performance) and peer-level factors (prosocial/delinquent peer) in a sample of JSO.

The dissertation consists of three aims. Aim 1 will focus on the relationship between caregivers' demographic characteristics and five parenting practices, namely communication, discipline, supervision, family cohesion and adaptability. We will first compare youth and caregiver reports of parenting practices and decide which one to use for future analyses based on reliability and consistency of reporting. We will then assess if parenting practices differ by caregiver demographic characteristics. We expect to find variations between parent and youth reports of parenting practices, as well as variations in parenting practices by characteristics of the caregivers.

Figure 1.1. Conceptual Framework for this Study



Aims 2 and 3 will examine two models to understand the relationship between parenting practices and adolescent general and school delinquency in a sample of juveniles who sexually offend. In aim 2, we will test whether history of victimization moderates the relationship between parenting practices and delinquency. In aim 3, we will also explore if peer association mediates this relationship. Since we are using cross-sectional data, we will assess the unidirectional relationship from parenting practices to delinquency via victimization history and peer association.

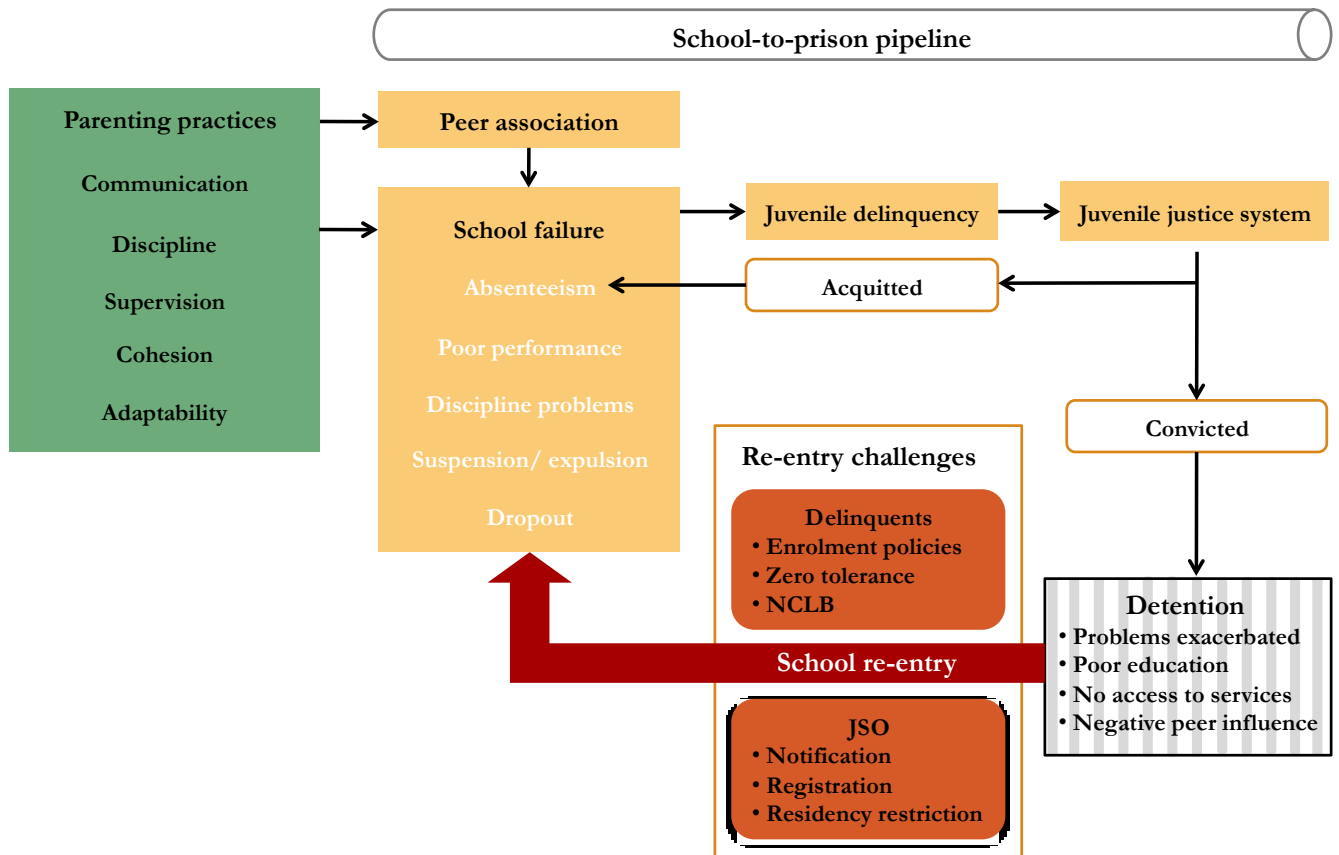
For aim 4, we will investigate individual, family and peer-level factors related to academic performance in a sample of juveniles who have sexually offended. The goal is to assess whether academic performance differs by primary caregivers' demographic characteristics (age, gender, race/ethnicity, family structure, level of education, poverty status and relationship to youth). We will then assess if the relationship between five parenting practices (communication, discipline, supervision, family adaptability and cohesion) and grades in core academic subjects varies as a function of peer association (delinquent peers/prosocial peers), while controlling for caregiver demographic characteristics.

Figure 1.2 frames this dissertation within a broader socio-ecological context. The schematic depicts the cycle driving juveniles who sexually offend to school failure and subsequent delinquency with substantial challenges to school re-entry. In the education literature, the *school-to-prison pipeline* is a trend that describes pushing problematic students out of the classroom and into the juvenile or criminal justice systems (Archer, 2009). Incarcerating juveniles has an iatrogenic effect, and leads to a myriad of negative consequences, including school failure (Mendel, 2011). Feierman explains that there should be bi-directionality, meaning that if the youth is moved from school to prison, he should be able to move back from prison to school, but the reality is that school re-entry is exceedingly challenging for delinquent youth (Feierman, Levick, & Mody, 2009). Current policies, such as the zero tolerance policy and the No Child Left Behind (NCLB) Act represent additional hurdles for re-entering youth (these policies will be discussed in chapter 2).

Despite the challenges of school re-entry, we believe that there is potential to interrupt the cycle leading to school failure. With a better understanding of how parenting practices influence peer association and the academic outcomes of juveniles who sexually

offend, we hope to initiate a discussion about ways caregivers can contribute to school re-entry of JSO.

Figure 1.2. Positioning this Study within a Broader Socio-Ecological Context



CHAPTER 2: LITERATURE REVIEW

Overview

This chapter will introduce some important concepts related to juvenile offending (non-sexual and sexual). We will begin by framing juvenile delinquency and juvenile sex offending within a broader public health perspective. We will then discuss characteristics of juveniles of sexually offend, while contrasting this population to general delinquents and adults who sexually offend. A presentation of academic, clinical and legal contexts of JSO ensues.

Public Health Significance of Juvenile Delinquency

Juvenile delinquency is a complex phenomenon that exists within a larger socio-cultural context, and affects families, friends, law enforcement agencies, schools, communities, the justice system and the national economy (Regolim, Hewitt, & DeLisi, 2011). From a legal standpoint, juvenile delinquency refers to behaviors committed by minors (usually under the age of 18) that are subject to the jurisdiction of the juvenile court. Behaviors prohibited by the juvenile code can be categorized as: 1) criminal offenses (destruction of property, robbery, etc.) and 2) status offenses (school truancy, running away from home, etc.). Status offenses are only prohibited for minors (not for adults). However, the definition of juvenile delinquency is contested and varies from state to state (Flowers, 1990). A critique of most definitions of juvenile delinquents is that they do not differentiate between youths who are caught engaging in an illegal behavior and those who engage in delinquent behaviors without being caught (Elrod & Ryder, 2011; Lee & McCrary, 2005). A youth who is caught is labeled a delinquent by society, a degrading status that can affect the youth's self-esteem and can provoke others to treat that individual with disrespect. This in

turn can lead to further delinquency, stigmatization and lost opportunities for the youth (Bernburg & Krohn, 2006).

In 2007, law enforcement agencies in the United States arrested approximately 2.18 million juveniles. Juvenile arrests accounted for 16 and 26 percent respectively of all violent crime, and property crime arrests in the United States in 2007 (Puzzanchera, 2010). Most of the juvenile arrests were for first time offenses (Cottle, Lee, & Heilbrun, 2001). Crimes committed can include the sale of drugs, theft, liquor law violations, sexual offenses and/or murder (Goodman & Scott, 2012). Some risk factors for juvenile delinquency include early diagnosis of attention-deficit hyperactivity disorder (ADHD) symptoms, low school connectedness, poor grades and high peer delinquency (Tolan, Gorman-Smith, & Schoeny, 2012). Protective factors include low ADHD symptoms, low emotional distress, high educational aspirations and high grade-point averages (Bernat, Oakes, Pettingell, & Resnick, 2012). A history of victimization and neglect puts adolescents at increased risk of becoming involved in delinquency later in life (Smith & Thornberry, 1995). Neglect can play a potentially critical role in the trajectory of juvenile offending because poor parental monitoring, parental rejection and dysfunctional family relationships can influence juvenile conduct problems (Ryan, Williams, & Courtney, 2013).

Understanding the risk and protective factors for juvenile offending is important in preventing re-offending behaviors. Recidivism is a problem with juvenile delinquents: a recent study estimated that 23.9% of delinquents had a repeat offense in the two years post-release from a treatment facility, with substance-involved offenders being most likely to recidivate (Calley, 2012). A meta-analysis on the prediction of criminal recidivism in juveniles concluded that family problems, ineffective use of free time, delinquent peers, conduct problems and pathology were the strongest predictors of juvenile reoffending (Cottle et al.,

2001). Similarly, Mulder and colleagues found that antisocial behaviors during treatment, family problems and psychopathology were associated with the degree of severity of recidivism among a sample of serious juvenile offenders (Mulder, Brand, Bullens, & Van Marle, 2010).

Public Health Significance of Juvenile Sex Offending

A report of national estimates of adolescent sexual violence found that 1 in 10 youth reported the perpetration of some type of sexual violence over the life course; 4% reported attempted or completed rape, with 16 being the modal age of first sexual perpetration (Ybarra & Mitchell, 2013). Another study found that between 40% and 50% of sexual crimes committed against children under the age of 12 were perpetrated by youths under the age of 18 (Worley, Church, & Clemmons, 2012). Adolescents younger than 18 account for nearly 20% of the arrests for sexual offenses in the United States (Pratt, Greydanus, & Patel, 2007). It is widely recognized that sexual violence is under-reported; therefore these figures are likely underestimates of the actual prevalence of sexual assault incidents (Veneziano & Veneziano, 2002). According to Elliott (1995), the ratio of self-report to adjudicated sexual offense for juveniles is 25:1 (Elliott, 1995).

Foege et al. proposed a multi-disciplinary public health approach involving law enforcement, judicial personnel and mental health professionals in 1995 (Foege, Rosenberg, & Mercy, 1995). Subsequently, the WHO promulgated a public health approach to sexual violence, emphasizing the prevention of sexual crimes and the rehabilitation and treatment of both the offender and victim (Mandela & Brundtland, 2002; McMahon, 2000). McMahon argues that the public health approach to sexual violence has the potential to significantly reduce sexual offenses (McMahon, 2000). The WHO published *World Report on Violence and Health* in 2002. During the ensuing years, attention has been focused on violence research,

including sexual violence research (Krug, Mercy, Dahlberg, & Zwi, 2002; Mandela & Brundtland, 2002). However, there is still work to be done to prevent sexual crimes.

Setting the Stage

The following section will present JSO within context of the literature by defining some important terms, comparing juvenile sex offenders with non-sex offenders, then comparing juvenile with adult sex offenders, and discussing what is considered normative sexual behavior for juveniles.

Definition of Terms

Child sexual abuse: Although there is no universal definition, the term “child sexual abuse” is used to denote sexual activity involving a child younger than 18 years of age (Haugaard, 2000) and is characterized by an imbalance of power because of the age difference between the child and the offender, or as a result of threat/force (Finkelhor, 1991). Child sexual abuse includes an array of sexual activities such as intercourse, oral-genital contact, fondling of genitals, exhibitionism, exposing children to pornography and the use of the child for prostitution or pornography.

Juveniles who sexually offend (JSO): The juvenile sex offender is a youth (usually under the age of 18) who commits a sexual act with another individual (child, peer or adult) against that person’s will, or in an aggressive and/or threatening fashion, or with a much younger child who cannot give consent (Gerardin & Thibaut, 2004). Sexual abusive behaviors range from voyeurism to exhibitionism, to penetration of a victim (Becker & Hicks, 2003). Youth are also subjected to statutory rape policies that criminalize consensual sexual activities between peers when at least one is a minor (Hines and Finkelhor, 2007).

Sexual violence: Sexual violence is defined as a completed or attempted sexual act that is not consensual, and committed against someone who is unable to consent or who has

refused to engage in the sex act (Espelage & Low, 2012). Sexual violence includes non-physical contact including unwanted voyeurism or exhibitionism, unwanted exposure to pornography, threats of sexual violence and taking nude pictures without consent (Basile & Saltzman, 2002).

Sexual assault: Sexual assault is a broad term used to describe any type of sexual activity that is non-consensual, including rape (or attempted rape), unwanted touching, sexual contact with a child or unwanted sexual exposure. Sexual assault may or may not involve force (Rennison, 2002).

Status offender: This legal term only applies to youth and designates a juvenile who commits acts that are in violations with the law (truancy, running away from home, underage drinking, violating curfews, etc.). These would not be considered crimes for adults (Arthur & Waugh, 2008; Bartollas & Miller, 1978).

Comparing Juvenile Delinquents with Juveniles who Sexually Offend

It is often the case that juveniles who commit sexual acts also commit non-sexual offenses (Butler & Seto, 2002; Ronis & Borduin, 2007). A large study of juveniles who sexually offended (n=1600) found that 63% of these JSO had committed non-sexual offenses as well (Ryan, Miyoshi, Metzner, Krugman, & Fryer, 1996). A recent study compared recidivism patterns among juveniles who committed sexual and non-sexual offenses (Caldwell, 2010). The study populations were similar in that they were both more likely to recidivate with non-sexual offenses. Indeed, JSO were nearly 10 times more likely to recidivate with a non-sexual offense as compared to another sexual offense (Caldwell, 2010). Overall, non-sexual offenders are three to four times more likely to recidivate as compared to juveniles who sexually offend (Burton & Meezan, 2004).

Juveniles who sexually offend and juvenile delinquents are similar in terms of experiencing difficulties in family/peer relationships, having poor academic achievement, exhibiting behavior problems (Ronis & Borduin, 2007) and antisocial attitudes and beliefs (Butler & Seto, 2002). Although there is scant research on psychopathology of JSO, it has been suggested that non-sex offending delinquent youth, compared to JSO have higher levels of psychopathology and are more likely to exhibit internalizing and externalizing problems (Butler & Seto, 2002; Freeman, Dexter-Mazza, & Hoffman, 2005; Kempton & Forehand, 1992).

Comparing Juveniles and Adults Who Sexually Offend

Until the early 1980s, sexual behaviors among adolescents were considered experimental and “normal”. For this reason, adolescent sexually abusive behaviors were not always detected nor punished, and it was up to the discretion of parents to address these behaviors within the home environment (Grant, 2000). Early research efforts were focused on adult sex offenders rather than on juvenile sex offenders (Prentky & Burgess, 2000) despite the fact that many adult sex offenders reported that their offending behaviors started during childhood or adolescence (Rasmussen, 2005). Although early treatment programs for juvenile sex offenders were modeled on programs initially created for adults (Righthand & Welch, 2001), there seem to be a number of important differences between juvenile and adult sexual offenders. As compared to adult sex offenders, juvenile sex offenders have higher rates of victimization (Hunter & Becker, 1994), less parental support (Hunter & Figueredo, 1999), and higher rates of psychopathology, learning disabilities and exposure to violence (Concepcion, 2004; Letourneau, Schoenwald, & Sheidow, 2004). On a more positive note, juvenile sex offenders tend to be more amenable to treatment and cessation of sex offending behaviors as compared to adults (Ryan, 1999). Another critical difference is

that working with juvenile offenders requires coordination between various institutions, including child welfare, juvenile courts, schools and caregivers (Ryan, 1999).

There are also a number of similarities between juvenile and adult sex offenders such as the variety of sexually offending behaviors, sexual experiences, family environment, mental health challenges and background histories (Righthand and Welch, 2001). History of victimization has been consistently associated with both the juvenile and adult sex offending literature (Ford & Linney, 1995). Juveniles and adults who sexually offend represent heterogeneous groups and share some similarities. However, the literature suggests that these groups should be considered as separate. Letourneau and Miner debunk the myth that JSO have more in common with adults who sexually offend than with juvenile non-sex offenders (Letourneau & Miner, 2005). Furthermore, they argue that failing to account for differences between juveniles and adults can result in poor treatment and legal choices.

Normative Sexual Development of Adolescents

The period of adolescence (corresponding to middle- and high-school age children) can be associated with myriad problems, including school failure, increased dropout rates (Henry, Knight, & Thornberry, 2012), delinquent activity (Keijsers, Branje, Vander Valk, & Meeus, 2010), increased violence (Van Lier, Vitaro, Barker, Koot, & Tremblay, 2009) and poor adjustment (Dodge & Pettit, 2003). Adolescence is a time of transition when a young person begins to define a new identity, building upon parental role models, but incorporating social values acquired from school and peers (Shtarkshall, Santelli, & Hirsch, 2007). As the adolescent becomes more autonomous, he/she defines clear boundaries between himself and his parents. During this time of transition, the adolescent is more likely to reject parental advice since he/she construes emotional and personal experiences as separate from that of parents (Rosenthal & Shirley Feldman, 1999; Shtarkshall et al., 2007). Yet, at the same time,

parental involvement during adolescence is critically important to guide the adolescent (Regnerus & Luchies, 2006).

Normative adolescent sexual behavior is difficult to define and varies across cultures (Gao et al., 2012). A simple explanation for this is that it is exceedingly difficult to categorize any sexual act as either “acceptable” or “unacceptable” within a particular socio-cultural context. Rather, it is preferable to look at adolescent sexual behaviors on a continuum in order to understand various sexual behaviors in the light of individual cultural, social, political and religious beliefs. According to Tolman et al. (2011), adolescent sexuality has positive qualities and should be understood as normative and developmentally expected (Tolman & McClelland, 2011). Sexuality is an integral part of adolescent identity formation, and therefore it is important to prepare the adolescent to become sexually mature and responsible.

Factors Associated With Juvenile Sexual Offenses

Following a socio-ecological approach (Bronfenbrenner, 1979), risk and protective factors for juvenile sexual violence can be organized as individual, relationship, community and societal level factors (Dahlberg & Krug, 2002; Tharp et al., 2013). Following is a brief explanation of risk and protective factors for juvenile sexual offending at each level.

Individual factors: Individual factors for sex offending refer to biological and personal history factors that make an individual more likely to become a perpetrator of sexual violence. Some of these risk factors include, but are not limited to history of abuse (Borowsky, Hogan, & Ireland, 1997; Daversa & Knight, 2007; Rossegger, Endrass, Urbaniok, Vetter, & Maercker, 2011), substance abuse (Borowsky et al., 1997), psychosocial deficits (Hunter, Figueredo, Malamuth, & Becker, 2003), emotional deficits (Hunter, Figueredo, Becker, & Malamuth, 2007), faulty sex-related cognitions (McCrady et al., 2008), early

exposure to pornography (Malamuth, Addison, & Koss, 2000; Seto & Lalumiere, 2010), arousal to deviant sexual stimuli (Hunter & Becker, 1994), conduct disorder/ antisocial behaviors (Hanson & Morton-Bourgon, 2005) and suicidal risk behaviors (Borowsky et al., 1997). Individual protective factors include emotional health (Moriarty, Stough, Tidmarsh, Eger, & Dennison, 2001), good academic performance (Borowsky et al., 1997) and involvement in social activities (Williams & Nelson-Gardell, 2012).

Relationship factors: Relationship factors examine relationships with family members, peers and intimate partners that increase the likelihood of an individual committing a sexually violent act. Some of these risk factors include exposure to parental violence (Caputo, Frick, & Brodsky, 1999), family dysfunction (Borowsky et al., 1997), having delinquent peers (Marshall, Hudson, & Hodgkinson, 1993), low family income (Gray, Busconi, Houchens, & Pithers, 1997) and poor parent-child relationship quality (Bischof, Stith, & Whitney, 1995). Some protective factors include connectedness with friends and parents, (Borowsky et al., 1997; Ray & Jackson, 1997; Resnick, Harris, & Blum, 1993), positive peer influence (Edmond, Auslander, Elze, & Bowland, 2006) and good communication with parents (Borowsky et al., 1997).

Community and societal factors: At the community level, school and neighborhood characteristics can be associated with an increased likelihood of becoming a perpetrator of a sexual crime. Societal level factors relate to socio-cultural norms that encourage or discourage sexual violence. Tharp identified two constructs that contribute to community and societal risk factors: gender-based factors such as attitudes towards gender roles (Caputo et al., 1999) and structural environmental factors (Tharp et al., 2013). However, the literature is limited on how community and societal factors contribute to juvenile sex offending. Among the studies that have looked at this, community connectedness with friends and

adults in the community (including school, church, and police personnel) has been shown to be a protective factor against sexual aggression among male adolescents (Borowsky et al., 1997). A study on youth resilience demonstrated that having a caring relationship with a competent adult was a significant protective factor for adolescents, in particular if these adolescents resided in a dangerous or non-nurturing environment (Masten, Best, & Garmezy, 1990).

Characteristics of Juveniles Who Sexually Offend

A Heterogeneous Group

Juvenile sex offenders are a heterogeneous group (Fanniff & Kolko, 2012). However, many juvenile sex offenders share common characteristics including having committed non-sexual delinquent behaviors, including having committed non-sexual delinquent behaviors, being predominantly male, often exhibiting anti-social and sexual offending behaviors, being an increased risk for experiencing academic and learning difficulties and having higher rates of psychiatric disorders (Becker & Hicks, 2003; Freeman et al., 2005; Veneziano & Veneziano, 2002). It is also common for the juvenile sex offender to have experienced physical and/or sexual abuse as a child, and witnessed family violence (Caputo et al., 1999; Seto & Lalumiere, 2010). The range of sexually abusive behaviors that JSO engage in includes both contact and non-contact offenses (Becker & Hicks, 2003). This heterogeneity has led to efforts to classify JSO according to the age of victim (child/peer/adult), gender of the victim and use of violence in committing the offense (Hunter, Hazelwood, & Slesinger, 2000; Hunter, Figueredo, Malamuth, & Becker, 2003).

Psychopathology

Many studies have found a relationship between juvenile delinquency and psychopathology (Garland et al., 2001; Teplin, Abram, McClelland, Dulcan, & Mericle, 2002;

Wasserman, McReynolds, Lucas, Fisher, & Santos, 2002). The relationship between psychopathology and juvenile sex offending is more controversial (Van Wijk, Blokland, Duits, Vermeiren, & Harkink, 2007). Sheerin showed that adolescent sex offending was associated with externalizing disorders and related psychosocial problems (e.g. low self-esteem). Additionally, Sheerin found a strong relationship between conduct disorders and committing sexual offenses (Sheerin, 2004). Few studies have compared the prevalence of psychopathology among JSO and non-sex offenders (Truscott, 1993; Valliant & Bergeron, 1997). Van Wijk led an exploratory study relating psychiatric disorders among JSO and non-sex offenders. Comparing sex offending to non-sex offending juveniles, JSO had higher rates of paraphilia and non-sex offenders had higher rates of psychiatric and conduct disorders (including ADHD). The study concluded that differences in psychiatric diagnoses between juvenile sex offenders and non-sex offenders reveal different etiologies for delinquent behaviors (Van Wijk et al., 2007). Overall, JSO is frequently associated with behavioral disorders, including conduct, oppositional and attention-deficient disorders (Sheerin, 2004; Zgourides, Monto, & Harris, 1997). Seto and Lalumière (2010) found that JSO reported more psychopathology (anxiety, low self-esteem) than non-sexual juvenile offenders (Seto & Lalumière, 2010). This same study found higher rates of depression, psychotic symptoms and suicidal symptoms when comparing JSO versus non-sexual offenders, but the differences between these two groups of offenders was non-significant.

Social Deficits

According to the adult sexual offending literature, empathy is linked with other factors that mediate deviant sexual behaviors including low self-esteem, poor interpersonal relationships and cognitive distortions including denial and/or justification of the sexual act (Covell & Scalora, 2002). Another factor is the inability for offenders to maintain close

relationships: offenders often misconstrue cues from peers, have inaccurate social perceptions and have poor emotional regulation (Covell & Scalora, 2002; Gottman & Katz, 1997; Stermac, Segal, & Gillis, 1990).

Within the adolescent literature, a meta-analysis determined that JSO were more likely to exhibit social anxiety as compared to non-sex offending juveniles (Seto & Lalumière, 2010). Moriarty and colleagues discuss the deficits in emotional intelligence underlying juvenile sex offending (Moriarty et al., 2001). Comparing JSO with a non-offender control group, they found that overall, male adolescent sex offenders exhibited higher aggression, were less clear about their feelings and less capable to change from unpleasant moods and prolong positive moods. These social deficits are often addressed in treatment – for example, some treatment models promote empathy building by having the offender interact with groups of victims. The rationale is to help the offender understand the consequences of their actions on the lives of the victims.

Treatment of Juveniles Who Sexually Offend

Many treatment models were initially developed for adult sexual offenders and were later adapted by clinicians for use with juveniles (Rasmussen, 2005). Recently, there has been a recognized need for more age-appropriate treatment as more youth are entering the juvenile justice system having committed sexual crimes (Righthand & Welch, 2005). The need for early interventions and treatment of JSO is further motivated by the belief that treatment can prevent recidivism of sexually abusive behaviors (Rasmussen, 2005). Below is a brief description of the main types of treatment for juvenile sexual offending. Although it is important to acknowledge the different types of treatment modalities available to JSO, this dissertation uses data from a study that used multisystemic therapy (MST).

Types of Treatment

Wraparound Services: The wraparound service approach is a comprehensive model that provides broad-level, community-based interventions for youth with a history of delinquency (Carney & Buttell, 2003). Henggeler and colleagues argue that effective treatment should address the multiple determinants of delinquent behavior and treatment should be offered within the youth's natural environment (Henggeler, Melton, Smith, Schoenwald, & Hanley, 1993). The wraparound approach builds on the strengths of the youth and family in order to promote behaviors that will prevent further offending behaviors. The wraparound service approach is based on two tenants: 1) families should be involved in the treatment of the youth, and 2) the offending youth should remain in the community setting and receive treatment there instead of being placed in a residential treatment program or institutional placement (Carney & Buttell, 2003). A case manager is usually responsible for identifying and helping the youth and family receive needed services (Carney & Buttell, 2003; Van Den Berg & Grealish, 1996).

Multisystemic Therapy (MST): Multisystemic therapy is a family-based treatment approach targeting individual, family, peer, and community risk factors for delinquent behaviors (Borduin et al., 1995). A number of studies have described the application of MST with juveniles who sexually offend (Borduin & Schaeffer, 2002; Henggeler et al., 2009; Letourneau et al., 2009). Goals of MST include improving family functioning and parenting skills, improving the adolescent's social skills, improving school performance and increasing support from the community (Bereiter & Mullen, 2012). The treatment plan is developed collaboratively between the family and the treatment provider and is tailored to meet the needs of each individual. MST interventions are provided in the youth's home, school and community, which makes it a more affordable treatment option as compared to residential

treatment (Bereiter & Mullen, 2012). MST has demonstrated positive outcomes for youth in the juvenile justice system including reduction in re-arrest and improved functioning at home, school and in the community (Timmons-Mitchell, Bender, Kishna, & Mitchell, 2006). Across three randomized controlled trials (RCTs), MST has shown positive effects on sexual and non-sexual recidivism, sexual behavior problems, general delinquency, substance use and family and peer relations, and school performance among JSO (Borduin & Schaeffer, 2002; Letourneau et al., 2009; Henggeler, Melton & Smith, 1992; Henggeler, Letourneau, Borduin, Schewe & McCart, 2009).

Cognitive Behavioral Therapy–Relapse Prevention (CBT-RP): A meta-analysis and review of treatment effectiveness for male adolescent sexual offenders found that studies using cognitive-behavioral therapies were the most effective among all treatment modalities for JSO (Walker, McGovern, Poey, & Otis, 2005; Reitzel & Carbonell, 2006; Alexander, 1999; Hanson et al., 2002). CBT-RP is usually offered as part of residential or community-based programs, and is considered the gold standard for the treatment of sex offenders (Gray & Pithers, 1993). Treatment involves the offender taking responsibility and understanding the cycle of sex offending behavior, exploring personal victimization history and its relationship with the sexual offense committed, showing empathy towards victims, correcting cognitive distortions, decreasing deviant arousal, improving social skills and sexual knowledge and relapse prevention (Bereiter & Mullen, 2012; Ertl & McNamara, 1997). Cognitive restructuring challenges the client to correct cognitive distortions that fuel sex offensive behaviors such as the belief that a victim wanted or deserved the abuse. The offender is asked to verbalize thoughts and beliefs that justify the sexual offending (Ertl & McNamara, 1997). CBT-RP also includes victim groups to help JSO develop empathy for victims (Bereiter & Mullen, 2012).

SAFE-T Program: SAFE-T is a sexual abuse specific, community-based outpatient program operating out of the Thistleton Regional Center in Ontario, Canada. This program targets children and families who have experienced incest (including adult incest offenders) and juveniles who sexually offend and their families (Worling, 1998). A follow-up of SAFE-T 10- and 20-years (Worling & Curwen, 2000; Worling, Litteljohn & Bookalam, 2010) found that relative to a comparison group, juveniles who participated in SAFE-T were less significantly likely to recidivate with sexual and non-sexual offenses. Evidence from the follow-up of SAFE-T supports treatment modalities that are specifically designed to meet the needs of individuals who have sexually offended.

Involvement of Caregivers in Treatment Programs

The most effective treatments for JSO involve the family of the offender in therapy and treatment of the family itself usually in the form of parental training and support (Zankman & Bonomo, 2004). Ideally, caregivers should be involved in treatment regardless of the theoretical model of treatment being used (Bereiter & Mullen, 2012). Assuming a socio-ecological approach, Zankman and Bonomo (2004) offer a theoretical rationale for including parents in the treatment of juveniles who sexually offend arguing that if parents play a role in the abuse cycle development, they can also play a role in the interruption of the cycle (Zankman & Bonomo, 2004). Moreover, parents often have a significant influence over the youth, thus they can potentially contribute to the youth's social and cognitive development. If parents are involved in therapy, they can contribute to the youth's change process and become more meaningful to the youth – this in turn can improve the youth-caregiver relationship. The youth's openness and accountability in treatment are the some of the strongest predictors for a successful outcome (Hunter & Figueredo, 1999). When parents are involved in the youth's treatment, they can model openness to treatment, making it more

likely that the youth will also be open to treatment (Hunter & Figueredo, 1999). Lastly, parents will continue to have a relationship with the youth beyond the period of the youth's treatment. This gives the parents the opportunity to develop a support system for the youth once the treatment is completed, hopefully leading to better outcomes and an improved youth-caregiver (Zankman & Bonomo, 2004).

Juvenile Sex Offenders and the Law

Community Notification and Registration Policies

Tewksbury and Jennings explain that legislators have long tried to control the behaviors of sex offenders (Tewksbury & Jennings, 2010). In response to high-profile sex crimes in the late 1930s, states passed *sexual psychopath* laws (Sutherland, 1950a; Sutherland, 1950b). These laws were predicated on the assumption that sex offenders would recidivate because they lacked control over their sexual impulses. More than half a century later, and following the abduction of an 11 year-old boy in Minnesota, Congress passed a law mandating all states in the United States to register sex offenders with law enforcement agencies (Jacob Wetterling Crimes Against Children and Sexually Violent Offender Registration Act, 1994). The goal of registration is to track and monitor the whereabouts of sexual offenders. In 1996, "Megan's Law" was added to the Wetterling Act. This new law required law enforcement agencies to provide information to the public about registered sex offenders in order to improve the public's ability to protect itself against known sexual predators. Although each state decides what information should be made available to the public and how the information should be disseminated, information commonly available includes the offender's name, picture, date of incarceration, crime committed and the offender's place of employment or schooling (Trivits & Reppucci, 2002). In 2006, the Adam Walsh Child Protection and Safety Act superseded earlier registration and notification

policies with the creation of a three-tiered system to classify sex offenders based on their perceived risk to the community (Adam Walsh Child Protection and Safety Act, 2006). Notification and registration requirements are also applied to juveniles who sexually offend (Garfinkle, 2003; Letourneau, 2006; Trivits & Reppucci, 2002).

Controversies Around Legal Sanctions Imposed on JSO

More than half of the states in the United States require registration and community notification for juveniles adjudicated for sexual offenses (Garfinkle, 2003). From a public health perspective, the community notification and registration of sex offenders is viewed as preventative since its purpose is to protect the community against potential future threats from individuals with a history of sexual offense (Kamoie, Teitelbaum, & Rosenbaum, 2003). However, the effectiveness of the registries is highly controversial, especially when it comes to juveniles (Letourneau & Miner, 2005). According to Letourneau and Miner, three faulty assumptions underlie the current legal sanctions imposed on juveniles: 1) juvenile sexual offending is reaching epidemic proportions, 2) JSO have more in common with adult offenders as compared to other delinquents, and 3) JSO are at high risk for recidivism (Letourneau & Miner, 2005). Furthermore, Hiller argues that the registration of juveniles contradicts the state's interest in rehabilitating these youth - public disclosure of sexual offenses inhibits the rehabilitation of JSO (Hiller, 1998). A study of juveniles who sexually offend found that public registries increased the likelihood of offenders being found guilty for offenses over time (Letourneau et al., 2009; Caldwell, 2010). Moreover, notifying schools about sexual offenses committed by an enrolled student can lead to stigmatization (Lowe, 1997) and school bullying of the JSO (Trivits & Reppucci, 2002). More empirical research is needed to better understand the collateral consequences of these policies on juveniles who sexually offend (Garfinkle, 2003).

Juvenile Offenders and School

School Enrollment Procedures

According to Feierman, schools require students to provide documents that establish the student's residency, age, and immunization status. Schools may deny the youth re-enrollment if neither the juvenile justice system nor the student can provide these documents in a timely fashion (Feierman, Levick, & Mody, 2009). Citing anecdotal evidence, Feierman and colleagues found that most schools do not accept re-entering youth in the middle of the academic year (Feierman et al., 2009). The reality is that once a youth is referred to the juvenile justice system, students often have to make court appearances, often missing multiple days of school – this is true even if the case against the youth is ultimately dismissed (Wald & Losen, 2003). Students who are not re-enrolled into school for months are more likely to encounter further difficulties with the law (Wald & Losen, 2003). Even when the school re-enrolls these students, they usually do not accept the academic credit the youth earned while in detention (Mears, 2004). Again, these juveniles fall behind academically, increasing the likelihood that they will drop out of school, and perpetuating the cycle of school failure and delinquency.

Zero Tolerance

The Zero tolerance policies in schools throughout the United States represent a hurdle for the delinquents' reintegration (American Psychological Association Zero Tolerance Task Force, 2008). Zero tolerance policies are commonplace in U.S. schools, and are meant to remove disruptive or truant students from the school environment by suspending them from school. Between 1974 and 2001, the number of students suspended annually doubled from 1.7 to 3.1 million (Poe-Yamagata & Jones, 2000). The rationale is that by removing problematic students from the classroom, classmates will be less likely to

emulate their negative behaviors, thus improving school climate and promoting learning in the classroom (American Psychological Association Zero Tolerance Task Force, 2008; Teske, 2011). Owing to these zero tolerance policies, delinquent youth are prospectively identified as representing potential threats to the school environment (American Psychological Association Zero Tolerance Task Force, 2008; Skiba & Knesting, 2001). One consequence of the zero tolerance policy is that schools are often reluctant to allow juvenile delinquents to re-enroll into the public school system after adjudication. This is true even when research shows that juveniles who re-enter the public school system are less likely to recidivate and are more likely to become contributing members of their community (Office of Juvenile Justice and Delinquency Prevention, US Department of Justice, 2004). Schools are often hesitant to re-enroll delinquent students for fear that they might threaten the safety of the school community (Feierman et al., 2009). These concerns often lead re-entering delinquents to dropout of schools, or seek alternative education programs (New Jersey Institute for Social Justice, 2003). Unfortunately, alternative education programs often provide below average educational instruction, thus further hindering the youth's ability to re-enter a regular classroom (LaMura, 2012).

No Child Left Behind

In 2001, the federal government mandated a series of reforms for public and juvenile court schools under the auspices of No Child Left Behind Act (No Child Left Behind [NCLB], 2002). NCLB aims to provide all students (from gifted to at-risk students) with an education that meets their needs (Wang, Blomberg, & Li, 2005). Although well intended, NCLB is perpetuating the reluctance of schools to re-enroll delinquent schools. Indeed, schools want to make sure that their students attain proficient scores on standardized tests (Feierman et al., 2009; Kim & Sunderman, 2005) since NCLB requires that 100% of students

achieve proficiency in core academic subjects by 2014 (Bush, 2001; NCLB, 2002). As discussed previously, many students in the juvenile justice system face significant academic challenges. Consequently, schools are reluctant to accept these students for fear that the percentage of students who attain proficient test scores will decrease (Feierman et al., 2009).

Challenges to School Reentry Specific to Juveniles Who Sexually Offend

Academic Challenges of Juveniles Who Sexually Offend

According to Veneziano, juveniles who sexually offend and non-sex offenders share many characteristics including poor verbal skills, behavioral problems at school, truancy, low academic achievement and high rates of learning disabilities (Veneziano & Veneziano, 2002). Similarly, Ronis and Borduin found that male JSO and non-sex offenders experienced greater academic challenges (e.g. grades in core subject areas) as compared to their non-delinquent peers, but that sex offenders and non-sex offenders do not differ in their academic achievements (Ronis & Borduin, 2007). These studies are consistent with the belief that sexual offending is part of a broader pattern of delinquency (Van der Put, Van Vugt, Stams, Deković, & Van der Laan, 2013). Despite the paucity of research in this field, it does not seem that JSO face different academic challenges from general juvenile delinquents.

Registration, Community Notification and Stigmatization of Juveniles

Registration and community notification are unique to juveniles who sexually offend. Indeed, as a result of several high-profile sex crimes, the U.S. Congress passed the Wetterling Act requiring all 50 states to create registration programs for sex offenders and to disseminate sex offender registry information to the general public (Jacob Wetterling Crimes Against Children and Sexually Violent Offender Registration Act, 1994). Megan's Law was eventually added to the Wetterling Act after the brutal rape and murder of Megan Kanka in

New Jersey. This law requires states to have a system in-place to inform the general public about sex offenders who live in the community. Eventually, the Adam Walsh Child Protection and Safety Act superseded earlier registration and notification policies by creating a three-tiered system to classify sex offenders according to their perceived risk to the community (Adam Walsh Child Protection and Safety Act, 2006). These laws are also applicable to juveniles who sexually offend (Garfinkle, 2003; Letourneau, 2006; Trivits & Reppucci, 2002).

These policies affect the school experience of JSO in a number of ways. First, notifying schools about an enrolled JSO increasing stigmatization of the youth (Lowe, 1997), making it more likely that peers will ridicule and bully the JSO (Trivits & Reppucci, 2002). The label of sexual predator subjects the youth to prejudice and ultimately denies them opportunities (Garfinkle, 2003). Second, parents may protest the presence of a JSO in their child's school, leading the JSO to switch to an alternative school and potentially compromising the quality of education (Lowe, 1997; Trivits & Reppucci, 2002). Since schools are not provided guidelines on how to use the notification information, many schools find it easier to remove JSO from the classrooms than to deal with pressure from non-offending youths' parents (Lowe, 1997).

Residency Restrictions and Implications For School Selection

Residency restrictions are intended to prohibit sex offenders from residing or loitering within a certain distance from schools or areas where minors aggregate (Salvemini, 2007). The decision to place a residency restriction on juveniles varies by state: in California, a jury trial is required to restrict the residency of a juvenile, whereas in Illinois, juvenile offenders subjected to registration are also automatically prohibited from residing within 500 feet of a school (Norman-Eady, 2007). In the adult literature, residency restriction is found

to negatively affect employment opportunities, housing, social relations (Mercado, Alvarez, & Levenson, 2008), and is reported to increase homelessness and financial hardship (Levenson, 2008). No literature was found on the consequences of restricting residency for juveniles. However, forbidding youth from living near school seems certain to affect their ability to select a school to attend, to increase stigmatization and will likely lead to further social isolation. Thus, it would be worthwhile to reevaluate the appropriateness of residency restrictions for juveniles.

Summary

The literature review for this study highlights the complexity of juvenile sexual offending. While research has been conducted on individual and family characteristics of juveniles who sexually offend, there is a dearth of information pertaining to the academic performance and school reintegration of JSO. This study addresses a clear gap in the literature by looking at the impact of parenting strategies on academic performance of JSO. Using a socio-ecological approach, this dissertation focuses on questions not previously asked in research related to the role of caregivers in the academic performance of JSO, while considering demographic characteristics, the youth's victimization history and peer association.

CHAPTER 3: STUDY METHODS

Overview

This chapter provides a detailed overview of the quantitative research methods used in this study. Information about research design, sampling techniques, participant recruitment, instruments, statistical analyses and missingness will be described in-depth in this section.

Research Design

Data for this dissertation come from the 2004-2006 study entitled: “Effectiveness trial: multisystemic therapy (MST) with juvenile offenders”, led by Scott Henggeler, PhD and Elizabeth Letourneau, PhD. Youth who committed a sexual offense were identified by the State’s Attorney’s Office (SAO) in Illinois. Once the youth was identified as being eligible (see criteria below) for the study, his/her caregiver had to agree to participate in the study as well. Youth (n=127) between the ages of 11 and 18 were randomly assigned to one of two treatment conditions after the youth signed an assent form and their caregiver signed a consent form. The two treatment conditions were: 1) multisystemic therapy (MST) adapted for JSO, or 2) treatment as usual (TAU) for JSO, offered by the juvenile sexual offender unit of the juvenile probation department. A stratified permuted blocks randomization (McEntegart, 2003) was used to prevent chance imbalance across important study variables. Since many JSO recruited into the study had younger (versus older) victims, two distinct randomization categories were created based on the age of the victim: one category for child victims and another for peer/adult victims (Letourneau et al., 2009). The baseline data were collected within 72 hours of the youth’s enrollment into the study: both the caregiver and the youth completed a demographic survey, and then they separately completed individual assessment protocols. All interviews were completed at a time and place that was convenient

for the youth and his/her caregiver, most often at their home. Follow-up data were collected every 6 months for a period of 2 years. Additionally, research assistants contacted caregivers monthly via telephone to collect information on the youth's out-of-home placement and school attendance.

Inclusion Criteria

Study inclusion: This study enrolled youth who were convicted of a sexual offense, or who were convicted of a lesser offense in the event of a plea bargain (for example, a sex offense reduced to a charge of battery). To be included in this study, the youth had to demonstrate one or more of the following: 1) use of threats, violence, or weapons in the commission of the sexual offense, 2) more than one sexual assault victim, 3) at least one prior referral, arrest, conviction for a crime, and 4) known risk for delinquency (substance use, truancy, and/or gang involvement). Furthermore, the youth had to be 11-18 years old at the time of adjudication, and needed a caregiver who resided in Cook County, Illinois. Youth referred to residential treatment or detention centers were eligible for the study only after completion of their program. Youth referred to community-based sex offender treatment were also invited to participate in the study.

Study exclusion: Youth who were either acutely suicidal or acutely psychotic (as indicated by records or caregiver) were not eligible for inclusion in the study. The study was open to youth and caregivers who spoke English or Spanish.

Sample

Initially, 131 youths and their caregivers were enrolled into the study, but upon learning of the treatment the youth was randomized to, two youth-caregiver dyads withdrew from the study because they were hoping for the other treatment condition. Another two youth were determined not to have met eligibility criteria and were subsequently excluded from the

study. Thus, at baseline, the sample consists of 127 youth-caregiver dyads. The following table will summarize demographic characteristics for both the caregiver and the youth. It is important to note that the sample used for this study includes 3 (2%) girls. We will run all of our analyses with the female participants but we will not be able to compare female versus male offenders.

Table 3.1. Caregiver Baseline Demographic Characteristics (n=127)

| CAREGIVER DEMOGRAPHICS | | |
|-----------------------------------|----------|----------|
| | N | % |
| Age in years | | |
| 23-37 | 42 | 33.07 |
| 38-45 | 43 | 33.86 |
| 46-73 | 42 | 33.07 |
| Gender | | |
| Male | 20 | 15.75 |
| Female | 107 | 84.26 |
| Race/ethnicity | | |
| White, non-Hispanic | 22 | 17.46 |
| Black, non-Hispanic | 67 | 52.76 |
| Hispanic | 38 | 29.92 |
| Relationship to youth | | |
| Mother | 83 | 65.35 |
| Father | 19 | 14.96 |
| Other | 25 | 19.69 |
| Family structure | | |
| Two-parent family | 30 | 23.62 |
| Single-parent family | 59 | 46.46 |
| Stepparent family | 15 | 11.81 |
| Other family | 23 | 18.11 |
| Poverty status | | |
| Below poverty line | 59 | 46.83 |
| At poverty threshold | 20 | 15.87 |
| Above poverty line | 47 | 37.3 |
| Highest level of education | | |
| Less than high school | 52 | 40.94 |
| High school degree | 34 | 26.77 |
| Some college | 41 | 32.28 |

Note: The other category consists of foster parents and non-parental relatives (2 are male and 23 are female). The stepparent family consists of one natural/adoptive parent and one stepparent. The other family category includes youth who live with non-parental and non-relative caregivers.

Table 3.2. Youth Baseline Demographic Characteristics (n=127)

| YOUTH DEMOGRAPHICS | | | |
|---------------------------|-------------------------------------|----------|----------|
| | | N | % |
| Age in years | | | |
| | 11 | 4 | 3.15 |
| | 12 | 12 | 9.45 |
| | 13 | 21 | 16.54 |
| | 14 | 22 | 17.32 |
| | 15 | 22 | 17.32 |
| | 16 | 24 | 18.9 |
| | 17 | 21 | 16.54 |
| | 18 | 1 | 0.79 |
| Gender | | | |
| | Male | 124 | 97.64 |
| | Female | 3 | 2.36 |
| Race/ethnicity | | | |
| | White, non-Hispanic | 22 | 17.32 |
| | Black, non-Hispanic | 67 | 52.76 |
| | Hispanic | 38 | 29.92 |
| Type of school | | | |
| | Academic | 101 | 79.53 |
| | GED | 5 | 3.94 |
| | Certification, public school | 3 | 1.57 |
| | Certification, special school | 5 | 3.15 |
| | Alternative education | 6 | 4.72 |
| | Expelled, dropped out, incarcerated | 8 | 6.30 |
| | Graduated | 1 | 0.79 |

Recruitment

The institutional review boards of participating universities (Medical University of South Carolina, University of Illinois at Chicago, University of Missouri at St. Louis) previously approved all study documents and procedures during recruitment and data collection. Johns Hopkins University IRB approved use of the existing, de-identified data for secondary data analyses in the current project. Research assistants were responsible for recruiting participants into the study, and having participants sign consent and assent forms. The caregiver could give consent if he/she had physical (living with the youth) and legal custody (guardianship) of the youth. In the event that the caregiver did not have both legal

and physical custody of the youth, both the legal guardian and the primary caregiver had to give consent. Of 178 youth eligible for the study, 131 consented to participate. However, upon learning of the treatment condition the youth was assigned to, two youth-caregiver dyads withdrew from the study because they were not assigned to the treatment they were hoping for. Another two other families were excluded from the study because the youths were diagnosed with degenerative brain disorders. The final sample consisted of 127 youth-caregiver dyads.

Study Variables

Demographic Survey: The demographic survey is the only instrument where responses are gathered from whoever is able to provide the information (although not from people outside of the family such as probation officers or therapists). Typically, this will be the primary caregiver and the youth. Demographic variables pertaining to the caregiver include age in years (categorized for this project as 23-37/ 38-45/47-73), gender (female or male) and race/ethnicity (categorized for this project as White, non-Hispanic/ Black, non-Hispanic/ Hispanic). Age was originally modeled as a continuous variable, but after accounting for the distribution of the variable and its outliers, we decided to create categories based on tertiles. Observations with extreme values (outliers) on the independent variable affect regression models, and dichotomization is a way to prevent outliers from biasing tests results (DeCoster, Iselin, & Gallucci, 2009). Modeled after an article by Astone and McLanahan, family structure was defined as youth living with 1) two biological or adoptive parents (two parent family), 2) one biological/adoptive parent and no other caregiver (one parent family), 3) one biological/adoptive parent and a stepparent (stepparent family), or 4) one or two parents, neither of whom was a biological/adoptive parent, for example an extended family member or a foster parent (other family) (Astone & McLanahan,

1991). Categorizing family structure in this way allowed us to compare youth living in a single parent versus stepparent family, permitting the isolation of the effect of number of parents in the household. It also allowed us to examine the effects of having at least one biological or adoptive parent in the household versus none. To assess the relationship of the primary caregiver to the youth, data were categorized as mother (biological or adoptive mother), father (biological or adoptive father) and other (foster parents and non-parental relatives).

Lastly, variables used to assess family socioeconomic status included: caregivers' highest level of education categorized (for this project) as less than high school, high school graduate and some college. Variables on family annual income and number of people living in each household were used to assess poverty status. Specifically, we used the 2005 U.S. Department of Health and Human Services poverty guidelines to categorize poverty status as: 1) below poverty line, 2) poverty threshold, and 3) above poverty line (U.S. Department of Health and Human Services, 2005).

The Parenting Scale: Data on parental behavior constructs were collected using the Pittsburgh Youth Study (PYS) and assessed youth and caregiver reports separately (Loeber, Stouthamer-Loeber, Van Kammen, & Farrington, 1991). There is no time frame for the items in this scale. The parenting scale looked at three main constructs: lack of supervision (five items for caregiver scale and six items for youth scale), lax discipline (seven items for both caregiver and youth scales), and poor communication about the youth's activities (four items for caregiver scale and five items for youth scale). All of these items use a Likert-like scale, with higher values for the communication and supervision scales suggesting better outcomes, and suggesting poorer outcomes for the lax discipline scale. For ease of interpretation, lax discipline was reverse coded so that higher scores meant more consistent

discipline. Additionally, since the parent and youth versions for communication and supervision included a different number of items, we transformed the sum scores in such a way that the maximal score was the same for the youth and caregiver versions of PYS. This made it possible to easily compare sum scores for youth and caregiver reports of communication and supervision, now reported on the same continuous scale. The scales for communication, supervision and discipline demonstrated good reliability and construct validity in the Pittsburg youth study and in other studies (Loeber & Farrington, 1998; Loeber et al., 2001). As was found in a study by Henggeler and colleagues, the caregiver-reported scales for supervision and communication were positively skewed, and therefore analyses will differentiate between low and high levels of communication and supervision (Henggeler et al., 2009). Lax discipline (caregiver and youth reports) will be modeled as continuous variables because there is more variability in responses.

Family Adaptability and Cohesion Scales – III: Both the caregiver and the youth assess family relations by completing a 20-item questionnaire. There is no time frame for the items in this scale. FACES-III (Olson, Portner, & Lavee, 1985) evaluates family adaptability and cohesion from the youth and caregiver perspective. All items are assessed on a Likert scale, with responses ranging from 1 (almost never) to 5 (almost always). Cohesion is calculated as the sum of odd items, with higher scores suggesting that the family is more enmeshed. Adaptability is calculated as the sum of even items, with higher scores suggesting a more chaotic family life. For ease of interpretation, we reversed the order of values for adaptability. By reversing the values for adaptability, scores for adaptability and cohesion follow a similar direction, meaning that higher scores on both constructs reflect stronger family adaptability and cohesion. FACES-III has been used in studies with general delinquency and violent offenders (Blaske, Borduin, Henggeler, & Mann, 1989; Rodick, Henggeler, & Hanson, 1986).

Henggeler et al. assessed the internal consistency of FACES-II using a sample of 151 males adolescent repeat offenders, young adult prisoners and adolescent non-offenders between the ages of 12 and 24 (Henggeler, Burr-Harris, Borduin, & McCallum, 1991). FACES-II showed good internal consistency with coefficient alphas corresponding to 0.87 and 0.80 for cohesion and adaptability scales respectively, and test-retest reliabilities corresponding to 0.83 and 0.80.

The Peer Scale: We used two well-validated, youth-reported scales from the Pittsburgh Youth Study to assess peer delinquency and prosocial activities (Loeber et al., 1991). The PYS Peer Delinquency Scale assessed the frequency of peer engagement in delinquent behaviors in the past 90 days, and the PYS prosocial activities of peers scale assessed peers involvement in pro-social activities in the past 90 days (e.g. church/community/school athletics involvement). All items were rated using a Likert scale, with answers ranging from 0 “none of them [my friends]” to 4 “all of them [my friends]”. Higher scores suggested that a larger proportion (rather than number) of the youth’s friends were engaging in either delinquent or prosocial activities. We summed up the items for these two constructs and modeled them as two separate continuous variables. The peer delinquency and peer prosocial activities scales demonstrated adequate reliability, with internal consistencies (Cronbach’s alpha) ranging from 0.67 to 0.89 assessed at three time points (Henggeler et al., 2009). The peer delinquency variable was positively skewed so we used a log-transformation to improve model specification. The prosocial peer scale was normally distributed.

Self-reported Delinquency Scale (SRD): We used the SRD to assess the number of non-sexual delinquent events in the past 90 days (Elliott, Ageton, Huizinga, Knowles, & Canter, 1983). The present study focused on two subscales of the SRD: the 35-item general delinquency subscale assessed an array of criminal and delinquent activities, and the 8-item

school delinquency subscale assessed school-related delinquent behaviors (e.g. cheating on school tests, truancy). We modeled general delinquency (0, 1-6, more than 6) and school delinquency (0, 1-3, more than 3) as categorical variables. To trichotomize the data, we created a category of youth who had 0 general or school delinquent offenses. The following cut-off was selected based on the mean number of general and school offenses, which were 6.17 and 3.35 respectively. The SRD is considered one of the best-validated instruments to assess self-reported delinquency (Thornberry & Krohn, 2000), with a mean coefficient alpha of 0.67 in the same sample of JSO as used in this study (Letourneau et al., 2009).

Adolescent Clinical Sexual Behavior Inventory (ACSBI): To assess history of victimization, we selected the items from ACSBI pertaining to victimization history (Friedrich, Lysne, Sim, & Shamos, 2004). We compared answers from the caregiver and youth reports on the following three items: Has the youth/ have you been sexually abused (been exposed to, touched or fondled against his/her will)? Has the youth/ have you been physically abused (hit hard, kicked, or punched by an adult/parent figure, excessive physical discipline)? Has the youth/ have you been emotionally abused (criticized, put down, ridiculed)? Answers were rated on a Likert scale, with responses ranging from 0 (not likely) to 4 (definitely). Given the preponderance of 0 responses, we recoded the scale to a dichotomous 0 (not likely) versus 1 (any indication of abuse). We also created a poly-victimization to assess if the youth experienced none, one or more than one types of victimization. The ACSBI has demonstrated adequate reliability and validity in a sample of hospitalized adolescents (Friedrich et al., 2004), and in the same sample of JSO used in this study (Letourneau et al., 2009).

Child Behavior Checklist (CBCL): We focused on the subscale of the CBCL pertinent to education. To assess the youth's academic performance, we summed the items relating to

performance on the four core academic subjects (reading, English or language arts/ history or social studies/ arithmetic or math/ science) compared with other students in the classroom. All items are assessed on a Likert scale, with responses ranging from 1 (failing) to 4 (above average). We modeled the sum score as continuous for all of our regression analyses, with higher scores suggesting better academic performance. At times, we will also use the average grade reported by dividing the sum score of grades by the number of items in the scale. Looking at the average grade versus the sum score for grades will facilitate interpretation as we will then be able to refer to the original scoring system for grades, based on the Likert scale described above. Although we originally planned to use both caregiver and youth reports of academic performance, we decided to use only caregiver reports because there was less missing data for caregiver reports ($n=4$ for caregiver reports versus $n=9$ for youth reports). The CBCL (Achenbach, 1995) has been well validated and is usually considered one of the best instruments for assessing youth mental health functioning (Rescorla & Achenbach, 2004).

Analytic Methods

All data were analyzed using Stata version 12.0 (StataCorp, 2011), and the power analyses were performed using G*Power (Erdfelder, Faul, & Buchner, 1996). We performed descriptive analyses and regression diagnostics to make sure our data met the statistical assumptions of regressions (e.g. linearity, independence of errors, normality, homogeneity of variance and causality). We then performed hierarchical regressions, mediation and moderation analyses to assess the study hypotheses. Unless otherwise specified, the following section on statistical assumptions applies to all analyses conducted as part of this dissertation.

Statistical Assumptions of Regression Analyses

Linearity: Standard regression analyses only estimates the linear relationship between dependent and independent variables. We plotted observed versus predicted values to determine if the points were symmetrically distributed around a diagonal line (Pedhazur, 1997). To check for linearity in Stata, we created a scatter plot between the outcome variable and the predictor variable using the *scatter* command.

Independence of errors: We assessed whether errors associated with one observation were correlated with errors of other observations. To assess independence of errors, we plotted the residuals, defined as the observed value minus the fitted values. To assess for normality of residuals in Stata, we use the *predict* command after running the regression analyses to create residuals. We then used commands such as *kdensity*, *pnorm* and *qnorm* to check the normality of residuals.

Normality: Regression models assume that the variables are normally distributed. Variables that are skewed can distort relationships and significance tests (Osborne & Waters, 2002). We generated histograms (*hist* command in Stata) to visualize the distribution of our data. The distributions of the summed scores for communication, supervision (caregiver report) and peer delinquent association (youth report) were positively skewed so we used a log-transformation to help fit these variables into the model. In all instances, log transforming the scores for supervision, communication and delinquent peers association made the positively skewed distributions more normal. We also used robust standard errors to address concerns of lack of normality.

Homogeneity of variance (homoscedasticity): Homoscedasticity implies that the variance of errors is the same across all levels of the independent variable (Osborne & Waters, 2002). A violation of homoscedasticity usually results in standard errors being too

narrow or too wide. According to Berry and Feldman, slight heteroscedasticity does not affect significance testing, but serious heteroscedasticity can distort findings (Berry & Feldman, 1985). We checked the assumption of homoscedasticity by visualizing standardized residuals (errors) by the regression standardized predicted value using the *rvfplot, yline(0)* command in Stata. Overall, residuals were randomly scattered around 0, suggesting an even distribution of the errors.

Causality (pertains only to the mediation analysis): Hypotheses about directionality cannot be tested with cross-sectional data and therefore the results of our mediation analyses are only suggestive. To assess a causal relationship, we would need to refer to the Bradford-Hill criteria for causation (strength of association, consistency of the finding, specificity, temporal relationship, dose-response relationship, plausibility, coherence with other findings, experimentation, and consideration of alternative theories). We would also need longitudinal data or repeated measures to consider the temporality of events.

Regression

We used hierarchical regression as an alternative to basic multiple regression. Hierarchical regression is a process that involved entering predictor variables into the analysis sequentially. The order of variable entry is determined by the researcher and is based on theory. Hierarchical regression is useful to assess the contributions of predictor variables above and beyond previously entered predictors, thus examining incremental validity (Wakefield, 1997). The adjusted R^2 allowed us to determine the change in variance accounted for by predictors at each step of the analysis (Pedhazur, 1997). Since there is no definition for high versus low R^2 , we used the change in R^2 to assess whether the model fit improved (or not) at each step of the hierarchical regressions. We used hierarchical regressions to assess the effects of proposed moderation (aim 2) and to look at interaction effects (aim 3).

Moderation

Moderation is said to exist if the influence of a predictor on an outcome differs across levels of the proposed moderator. After selecting the proposed moderator based on theory, we performed the following steps to test for moderation (Aiken & West, 1991).

- We fit a regression model predicting the outcome (Y) variable from both the predictor variable (X) and the moderator variable (M), in other words: $X + M \rightarrow Y$. We verified that both the effects and the general R^2 for the model were significant.
- We tested for moderation by including an interaction term between the proposed moderator and the predictor variable to see if the interaction helped explain variation in the outcome. The equation corresponds to: $X + M + XM \rightarrow Y$. Moderation is suggested when the interaction term is significant, as was the case for poly-victimization (moderator) on the supervision-general delinquency relationship.

Mediation

We followed the procedures outlined by Baron and Kenny to test for mediation (Baron & Kenny, 1986). After selecting the proposed mediator based on theory, we performed the following steps to test for mediation:

- We confirmed the significance of the predictor variable (X) on the outcome variable (Y), corresponding to: $X \rightarrow Y$.
- We confirmed the significance of the predictor variable (X) on the proposed mediator (M), or: $X \rightarrow M$.
- We confirmed the significance of the relationship between the mediator and the outcome in the presence of the predictor variable, or: $X + M \rightarrow Y$.

- We confirmed that the mediator attenuated the strength of the relationship between the independent and dependent variables.

To assess the strength of the mediation and to test for statistical significance of a mediation pathway, we used the Sobel test (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Sobel, 1982). We performed bootstrapping with case resampling to obtain an accurate estimate of the standard error of the indirect effect (MacKinnon et al., 2002).

Power Analysis

We used the G*Power software (Erdfelder et al., 1996) to computer power based on aim 2.2. Our hypothesis is that having a history of victimization (no history of victimization/ at least one type of abuse) is associated with an increase in general delinquency (no general delinquent offense/ at one least general delinquent offense). We used the Fisher's exact test to check this hypothesis (Fisher, 1935). The null hypothesis for the Fisher's exact test is that the relative proportions of one variable are independent of the second variable. This test is appropriate when sample size is small. Given our sample size of 127, an alpha set at 0.05 and using a two-tailed test, we have a power of 0.90 to detect significant differences between JSO with and without a history of victimization assuming there really is a difference.

Missing data

We conducted preliminary analyses to explore patterns of missingness in the data. We found missingness for income, communication, supervision and discipline, delinquent and prosocial peer association and academic performance. No data were missing for the FACES, ACSBI or SRD scales. Unless otherwise specified, we assumed that data was missing at random (MAR). MAR assumes that patterns of missingness are considered random after adjusting for observed covariates (Rubin, 1976). For MAR data, we performed a simple imputation using the average of available data for each individual. If more than 50%

of the items for a particular construct were left unanswered, we left the data as missing, and did not impute. We adjusted for missing data by using the full-information maximum-likelihood (FIML) estimation. FIML is considered an appropriate method for handling data that is assumed to be missing at random (Schafer & Graham, 2002). A description of the amount of missingness and how we handled it follows.

Demographic Survey: Based on the descriptive statistics of demographic variables, only one caregiver failed to report income, corresponding to 0.78% of the sample. Income data is usually not missing at random (NMAR) because individuals with lower or higher income are more likely to omit reporting this information (Tsikriktsis, 2005). Therefore, we did not impute income data, and the individual with missing data was subsequently dropped from analyses that included income using listwise deletion.

The Parenting Scale – youth report: Based on descriptive statistics of parenting practices, two youths had 1 item missing for their report of supervision, and one youth had 1 item missing for the report of lax discipline. Additionally, 18 items (10 for communication and 8 for supervision) were scored as “don’t know” on the PYS youth report across 13 respondents. Since answers of “don’t know” yielded no useful information about parenting strategies, we recoded these answers as missing. When possible, we performed simple imputation using the average of available data for each individual. This resulted in us retaining all but two youth reports for communication and all but one youth report for supervision because more than 50% of data for missing for these scales.

The Parenting Scale – caregiver report: Based on descriptive statistics of parenting practices, 5 caregivers had one item missing for their report of supervision, and one answer was scored “don’t know” for the PYS caregiver report of communication. Since answers of “don’t know” yielded no useful information about parenting strategies, we recoded these

answers as missing. When possible, we performed simple imputation using the average of available data for each individual. This resulted in us retaining all but one youth report for supervision.

Child behavior checklist (CBCL): We found more than twice as much missing data for the youth reports of academic performance as compared to caregiver reports. Four caregivers (3.2%) failed to answer all four questions about the youth's academic performance and nine adolescents (7.1%) failed to report all four questions about their academic performance. In all instances, the reason for not reporting grades was that the youth was not currently attending school. No imputation was possible for either youth or caregiver reports because 100% of the items regarding grades in core academic subjects were missing, and therefore we had to drop these individuals from the analysis.

Peer Scale: As described above, we recoded answers of "don't know" as missing because these provided no useful information about our study variables. Only two items were recoded as missing for the prosocial peer scale. Five study participants did not complete any items of the peer delinquency and peer prosocial activities scales, and we had to drop them from our analysis. For the peer prosocial activity scale, one individual left three answers out of seven blank and another left one item blank. We imputed the data for these two individuals. Since five individuals did not answer any of the questions related to peer antisocial behavior, we had to drop them from the analysis.

CHAPTER 4: VARIATIONS IN PARENTING PRACTICES BY DEMOGRAPHIC CHARACTERISTICS OF CAREGIVERS

Overview

Juvenile sexual offending does not develop in a vacuum, but rather exists within a larger socio-cultural context, both affecting and influenced by communities, schools, friends, families and other caregivers (Rich, 2011). This chapter will focus solely on the family context of juvenile sexual offending, looking at the relation between caregiver socio-demographic characteristics and five parenting practices: communication, discipline, supervision, family adaptability and family cohesion. Chapters 5, 6 and 7 will complement this study by addressing individual, school, community and peer contexts of juvenile sex offending.

Introduction

Family factors are probable antecedents of juvenile sex offending (Graves, Openshaw, Ascione, & Ericksen, 1996). Researchers have described families of juveniles who sexually offend as dysfunctional (Barbaree, Marshall, & McCormick, 1998; Graves et al., 1996; Smallbone & Dadds, 2000), disorganized, chaotic (Eastman & Bunch, 2004; Kobayashi, Sales, Becker, Figueredo, & Kaplan, 1995) and emotionally unsupportive (Caputo, Frick, & Brodsky, 1999). High levels of conflict, poor communication (Fagan & Wexler, 1988; Hudson & Ward, 1997), family instability (Becker, 1998), parental criminality and violence (Caputo et al., 1999; Oliver, Hall, & Neuhaus, 1993) have also been associated with families of JSO. In the juvenile delinquency literature, these family factors are further exacerbated by negative contextual factors such as socioeconomic disadvantage (Bank, Forgatch, Patterson, & Fetrow, 1993) and single-parent family structure (Griffin, Botvin, Scheier, Diaz, & Miller, 2000). Graves and colleagues conducted a meta-analysis on

demographic and parental characteristics of JSO and found that they were typically from low- to mid-socioeconomic status, maladaptive families (Graves et al., 1996).

Building on the work of Graves and colleagues, this study examines the association between caregiver characteristics and parenting practices to better understand how family factors are related to JSO. This query is critical given rapid changes in family structure spurred by recent demographic trends and affecting parenting practices (Osborne, Berger, & Magnuson, 2012). Cohabitation, divorce, non-marital fertility, non-parental living arrangements are adding to the complexity and instability of family systems, especially among disadvantaged populations (Ellwood & Jencks, 2004; Ventura & Bachrach, 2000). In turn, family transitions are associated with adverse child outcomes, including cognitive, emotional, social and educational challenges that are often carried into adulthood (Amato, 2005).

In light of the above, and within the context of a sample of youth adjudicated and/or charged with sexual offending, the specific objectives of this study are threefold: 1) to determine how best to assess parenting practices using available youth and caregiver reports on multiple assessment instruments; 2) to determine if parenting practices differ by caregivers' age, gender, race/ethnicity, family structure, level of education and poverty status; and 3) to determine if parenting practices differ by the relationship of the primary caregiver to the youth (mother/father/other). This study will begin with a review of the literature regarding parenting practices and parental characteristics as they relate to juvenile offending, and the importance of considering the informant when collecting data on parenting practice.

Parenting Practices and Juvenile Delinquency

The literature on parenting practices, including communication and supervision, and family functioning including family cohesion and adaptability as regards juvenile sex

offending is sparse. When insufficient information is available on juveniles who sexually offend, we have consulted the literature on general juvenile delinquency, acknowledging that differences may exist between these two types of juvenile offenders. In particular, youth who have sexually offended are generally less delinquent than other delinquent youth (Seto & Lalumiere, 2010), possibly because the bar for adjudication is lower for sex crimes than for other types of violent or “person” offenses (DiCataldo, 2009). A review of the literature comparing juvenile sex offenders to non-sex offenders revealed inconsistent results when looking at demographic factors, family functioning and parental characteristics (Van Wijk, Vermeiren, Loeber, Doreleijers, & Bullens, 2006). To avoid making general statements about JSO based on the juvenile delinquency literature, we will clearly mention what type of offense we are referring to. When we use the term “delinquency”, we are referring to general delinquency, which includes both non-sex and sex crimes.

Communication

Hirschi proposed that it is not parent-child communication per se that impacts delinquency, but rather the “focus” of the conversation that influences delinquency (Hirschi, 1969). Along the same lines, Cernkovich and Giordano differentiated instrumental communication (e.g. talking about challenges, plans for the future) from intimate communication (e.g. communicating private thoughts and feelings). They emphasized the importance of looking at “types” of family communication to understand its relationship with juvenile delinquency (Cernkovich & Giordano, 1987). A study of high school students in the United States revealed that open communication with a parent was significantly associated with less serious forms of delinquency. However, once a youth decided to engage in a criminal activity, the level of communication did not appear to influence the type of crime or severity of the crime (Clark & Shields, 1997). Communication in families of JSO

and violent offenders is often unsupportive and characterized by aggressive statements and interruptions (Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 1998). In the JSO literature, Bischof and colleagues examined communication patterns in families of JSO, finding that parent-child communication was poorer in families of JSO as compared to a normative sample (Bischof, 1992; Bischof, Stith, & Whitney, 1995). A study comparing juvenile violent sex offenders and violent non-sex offenders on 66 variables found few between group differences. However, poor communication was more prevalent in families of the JSO (Van Wijk, Loeber, Vermeiren, Pardini, Bullens, & Doreleijers, 2005). The present study will look at frequency of communication about daily activities in families of JSO in relationship to caregiver characteristics.

Supervision

Supervision refers to monitoring the youth's whereabouts, schoolwork and peer relationships (Farrington, 2010). There is a general consensus that the optimal behavior for the parent vis-à-vis a misbehaving juvenile is to demonstrate a high level of supervision and support, while avoiding harsh punishment (Amato & Fowler, 2002). Of all parenting practices, supervision is usually considered the strongest predictor of juvenile offending, sometimes predicting a two-fold increase in delinquent behaviors (Farrington, 2010; Smith & Stern, 1997). A classic study conducted in Boston found that poor parental supervision during childhood was the strongest predictor of violent and property offenses up until age 45 (McCord, 1979). The JSO literature tends to refer to parental supervision in the context of treatment (Gray & Pithers, 1993). Hunter and Figueredo report that supervision and support is often lacking in families of JSO (Hunter & Figueredo, 1999). Van Wijk and colleagues found that poor supervision was more prevalent in families of violent sex offenders as compared to families of violent non-sex offenders (Van Wijk, Loeber,

Vermeiren, Pardini, Bullens, & Doreleijers, 2005). This study will gauge caregivers' awareness of the whereabouts of JSO in relation to caregiver characteristics.

Discipline

Lax and inconsistent discipline and poor relationships with parents have been linked with juvenile delinquent behaviors (Hoeve, Dubas, Gerris, Van der Laan, Peter, & Smeenk, 2011). Parental discipline refers to the parent's response to the youth's behavior (Farrington, 2010). A review by Haapasalo and Pokela showed that harsh or punitive discipline was associated with juvenile delinquency (Haapasalo & Pokela, 1999). A follow up study of 800 children from ages 10 to 30 demonstrated that poor family management (poor supervision, inconsistent rules and harsh discipline) during adolescence was a strong predictor of violence later in life (Herrenkohl et al., 2000). A classic, longitudinal study of 411 schoolboys between the ages of 8 and 18 revealed that inconsistent discipline predicted an increased risk for delinquency (West & Farrington, 1973). Van Wijk et al. looked at the lack of persistency in parental discipline and found no difference between violent juvenile sex offenders and non-sex offenders (Van Wijk, Loeber, Vermeiren, Pardini, Bullens, & Doreleijers, 2005). Erratic discipline can mean that a parent sometimes punishes and sometimes ignores bad behaviors, or two parents can be inconsistent in their disciplinary actions. For example, one parent can ignore the problematic behavior while the other harshly punishes the child for the same behavior. To build on the extant literature, we will assess the use of punishment in families of JSO as a function of caregiver characteristics.

Family Adaptability and Cohesion

Adaptability and cohesion are two indicators related to family functioning. Adaptability is the capacity of a family system to shift its structure, roles and relationships in response to developmental changes and stressors. Cohesion relates to the connectedness or

separation of individuals within a family, and is important to understand emotional bonds between family members (Olson, 2000). A number of studies have used the Family Adaptability and Cohesion Scale (FACES) versions II or III to assess adaptability and cohesion in families of juveniles who sexually offended. Symboluk et al. found no differences between three groups (molested JSO, non-molested JSO and non-sex offending delinquents) in regards to family cohesion and adaptability, peer support, antisocial beliefs and conduct disorder (Symboluk, Cummings, & Leschied, 2001). Smith et al. constructed three risk levels for re-offending using measures of aggression, self-esteem, impulsivity, social avoidance, sexual fantasies and the youth's perceptions of family cohesion and adaptability. Results indicated that high-risk JSO reported less family cohesion, but there was no difference in family adaptability when comparing the three risk-level groups (Smith, Wampler, Jones, & Reifman, 2005).

Comparing JSO, violent juvenile delinquents, non-violent juvenile delinquents and non-problem juveniles, Bischof, Stith and Wilson found that youth who had sexually offended reported greater family cohesion and found their families to be more supportive and helpful as compared to other delinquent youth – no difference was found in terms of adaptability (Bischof, 1992). More recently, Ronis and Borduin compared 115 male juveniles, broken down into the following groups: JSO with peer/adult victims, JSO with child victims, violent non-sexual offenders, non-violent non-sexual offenders and non-delinquent juveniles (Ronis & Borduin, 2007). Youth in the JSO and non-sexual offenders groups reported lower family cohesion and adaptability as compared to non-delinquent youths families. Despite the number of studies that have looked at JSO's family adaptability and cohesion, results remain inconclusive. Plausible explanations for these conflicting reports

include inadequate sample sizes, failure to use appropriate comparison groups, or conclusions that relied on clinical or descriptive reports.

Caregiver Demographics and Juvenile Sex Offending

Race/Ethnicity and Age

Several studies assessed the relationship between race/ethnicity of the juveniles and offending, yielding conflicting results (D'Alessio & Stolzenberg, 2003; Peterson, Esbensen, Taylor, & Freng, 2007; Piquero & Brame, 2008). Using data from the Add Health Study, Leiber et al. found no difference in juvenile delinquency by race/ethnicity (Leiber, Mack, & Featherstone, 2009), whereas McNulty and Bellair found greater involvement in delinquent activities for Hispanics and African Americans (McNulty & Bellair, 2003). McNulty and Bellair explain racial and ethnic differences as a function of variations in the socioeconomic context, influencing the living environment and social capital available to the youth (McNulty & Bellair, 2003). In other words, it is not the race/ethnicity per se that influences juvenile delinquency, but rather race/ethnicity is associated with a gamut of socio-economic factors that affect the neighborhood the youth is raised in and the peers the youth interacts with. No study was found that looked specifically at the race/ethnicity of the caregiver and its relationship with juvenile sex offending.

The age of the caregiver may also impact juvenile delinquency. Frederick argued that adolescents raised by grandparents were more likely to engage in delinquency since older caregivers do not have the stamina to monitor the youth's whereabouts (Frederick & Lisw, 2010). An exploratory study found that mothers of JSO tended to be younger than mothers of non-sex offenders (Van Wijk, Loeber, Vermeiren, Pardini, Bullens, & Doreleijers, 2005). Given the lack of empirical data, we cannot draw any conclusions regarding age of caregiver

and sexual offending, but we expect the present study to provide more insight into this relationship.

Family Structure and Gender of Caregiver

A meta-analysis found that youth reared in broken homes (broadly defined as a “defective” or incomplete family) were 10-15% more likely to engage in delinquent behaviors when compared to peers reared in intact homes (Wells & Rankin, 1991). More recent publications concur: youth from non-intact homes engage in more delinquent behaviors than peers from intact homes (Demuth & Brown, 2004; Rebellon, 2002). However, no difference was found when comparing youth raised in a single-mother versus single-father home after controlling for parental absence (Demuth & Brown, 2004). Youth in blended homes (either cohabitating families or stepfamilies) also exhibit higher levels of delinquent behaviors as compared to youth in single-parent homes (Apel & Kaukinen, 2008). Schroeder et al. looked at how changes in family structure over time affected youth delinquent behaviors. They found that family transition is associated with a significant increase of offending but secure attachment with a parent prior to this transition can buffer negative outcomes (Schroeder, Osgood, & Oghia, 2010). In a meta-analysis of studies conducted across 20 years (1973-1993), Graves et al. assessed parental correlates of juvenile sex offending (Graves et al., 1996). This research found that three quarters of JSO came from single-parent families, most often headed by a female caregiver (Graves et al., 1996). We expect to find the same demographic profile in the current sample.

Socioeconomic Status

Stouthamer and colleagues found low SES to be correlated with delinquency (Stouthamer-Loeber, Loeber, Wei, Farrington, & Wikström, 2002), while other researchers found no predictive validity for this relationship (Tittle & Meier, 1991). Agnew and

colleagues suggest that economic problems in particular rather than SES more generally contribute to delinquency (Agnew, Matthews, Bucher, Welcher, & Keyes, 2008). Some studies argue that the inability to achieve economic goals is associated with delinquency (Cernkovich, Giordano, & Rudolph, 2000), while others argue that economic problems contribute to negative stimuli that lead to delinquency (Wadsworth & Compas, 2002). Parental education is also commonly used as a dimension of socio-economic status. A study using Add Health data found that juvenile delinquency is negatively correlated with parental education (Demuth & Brown, 2004). Four studies found no difference in family socio-economic status, parental employment and educational attainment when comparing sex and non-sex juvenile offenders (Bischof, Stith, & Whitney, 1995; Butler & Seto, 2002; Ford & Linney, 1995; Van Wijk, Van Horn, Bullens, Bijleveld, & Doreleijers, 2005). The study underway will test if caregiver education and poverty status are significantly related to parenting practices.

Relationship of Caregiver to the Youth

A meta-analysis conducted about 20 years ago on the relationship between families and delinquency reports that the replacement of absent parents with stepparents is associated with increased delinquent behaviors in youth (Wells & Rankin, 1991). More recently, and using longitudinal data from the Add Health study, Brown found that adolescents who experienced a family transition (i.e. moving into a stepfamily) were more likely to report higher levels of delinquency relative to peers who lived with two biological parents (Brown, 2006). It is not only the relationship of the caregiver to the youth that influences the parenting system. Studies that have looked at parenting arrangements have focused mainly on single- versus two-parent families (whether traditional, stepfamilies or blended families), with little attention to parenting by non-family members (Hunter, Pearson,

Ialongo, & Kellam, 1998). Hunter and colleagues emphasized the importance of accounting for both the relationship of the caregiver to the youth and the number of caregivers available to the youth (Hunter et al., 1998). They found that African American caregivers were more likely to depend on cross-household parenting arrangements, and single-parent families were more likely to experience parenting isolation. This study raises awareness of the creative and flexible parenting solutions that are being employed today, while exploring the effects of non-traditional caregiver networks on youth outcomes. The study that we propose will also account for changes in caregivers over time because there is mounting evidence to suggest that family changes are associated with negative child outcomes (Wu & Thomson, 2001). Based on the available research, we have reasons to believe that caregiver turnover may modify the effect between relationship of caregiver to youth and parenting practices. This will be tested in our proposed study.

Parenting Informant

Studies on the relationship between parenting and delinquency usually rely on youth or parent reports (Hoeve et al., 2009). Lanz and colleagues investigated to what extent parent and adolescent reports on parenting behaviors were congruent, accounting for the age of the adolescent and the gender of the parent or youth (Lanz, Scabini, Vermulst, & Gerris, 2001). They found that congruence in the reports increased from early to middle adolescence, hypothesizing that adolescents develop greater competence for interpreting parents' behaviors. A recent meta-analysis on the relationship between parenting and delinquency, summarizing information from 161 published and unpublished studies (Hoeve et al., 2009), found that parents were more likely to report positive characteristics of their family (Steinberg, 2001), whereas adolescents were more prone to highlight negative aspects of parenting, in an attempt to demonstrate independence from parents (Noller & Callan, 1988).

Hoeve and colleagues suggest that children who engage in delinquent behaviors are more likely to report negative parenting practices because of their negative worldviews (Hoeve et al., 2009). Regardless of the informant selected, researchers should take into consideration the informant when discussing findings (Hoeve et al., 2009).

The Current Study

Few studies have looked at the parenting characteristics of caregivers of JSO (Bischof et al., 1995; Graves et al., 1996; Van Wijk, Loeber, Vermeiren, Pardini, Bullens, & Doreleijers, 2005) or parenting practices of families of JSO (Eastman & Bunch, 2004; Worley, Church, & Clemmons, 2012). To the best of our knowledge, no study has assessed the relationship between caregiver demographics and parenting practices in a sample of JSO. Focusing on the family context, this study will identify variations in parenting practices by demographic characteristics of primary caregivers of juveniles who sexually offend. We utilize baseline cross-sectional data from 127 juveniles who sexually offended and their caregivers from a randomized controlled trial (parent study) to address the following aims: 1) to determine how best to assess parenting practices using available youth and caregiver reports on multiple assessment instruments, 2) to determine if parenting practices differ by caregivers' age, gender, race/ethnicity, family structure, level of education and poverty status, and 3) to determine if parenting practices differ by the relationship of the primary caregiver to the youth (mother/father/other).

Methods

This section presents an overview of the sample, instruments, missingness and analytical techniques used. More information about the parent study's trial research design, inclusion/exclusion criteria, recruitment procedure, instruments, missingness, power analysis and statistical methods used can be found in chapter 3.

Sample

Data for this dissertation comes from a 2004-2006 study entitled: “Effectiveness trial: multisystemic therapy (MST) with juvenile offenders”. Youth who committed a sexual offense were enrolled into the study with a caregiver. Youth (n=127) between the ages of 11 and 18 were randomly assigned to one of two treatment conditions after the youth signed an assent form and their caregiver signed a consent form. The two treatment conditions were: 1) multisystemic therapy (MST) adapted for JSO, or 2) treatment as usual (TAU) for JSO, offered by the juvenile sexual offender unit of the juvenile probation department. A stratified permuted blocks randomization (McEntegart, 2003) was used to prevent chance imbalance across important study variables. The youth sample was 97.64% (n=124) male and 2.36% (n=3) female. At baseline, the mean age of the youth was 14.63 (SD = 1.73). We use only the baseline cross-sectional data for this paper.

Study Variables

Demographic information: Demographic variables pertaining to the caregiver include age in years (23-37/ 38-45/47-73), gender (female or male) and race/ethnicity categorized as White, non-Hispanic/ Black, non-Hispanic/ Hispanic. Age was originally modeled as a continuous variable, but after accounting for the distribution of the variable and its outliers, we decided to create categories based on tertiles. Observations with extreme values (outliers) on the independent variable affect regression models, and trichotomization is a way to prevent outliers from biasing tests results (DeCoster, Iselin, & Gallucci, 2009).

Modeled after an article by Astone and McLanahan, family structure was defined as youth living with 1) two biological or adoptive parents, 2) one biological/adoptive parent and no other caregiver, 3) one biological/adoptive parent and a stepparent, or 4) one or two parents, neither of whom was a biological/adoptive parent (e.g., extended family, foster

parent) (Astone & McLanahan, 1991). Categorizing family structure in this way allowed us to compare youth living in a single parent versus stepparent family (i.e. the stepparent family is composed of one biological parent and one stepparent), permitting the isolation of the effect of number of parents in the household. It also allowed us to examine the effects of having at least one biological or adoptive parent in the household versus none. To assess the relationship of the primary caregiver to the youth, data were categorized as mother (biological or adoptive mother), father (biological or adoptive father) and other (foster parents and non-parental relatives). Lastly, variables used to assess family socioeconomic status included: caregivers' highest level of education categorized as less than high school, high school graduate and some college. Variables on family annual income and number of people living in each household were used to assess poverty status. Specifically, we used the 2005 U.S. Department of Health and Human Services poverty guidelines to categorize poverty status as: 1) below poverty line, 2) poverty threshold, and 3) above poverty line (U.S. Department of Health and Human Services, 2005).

The Parenting Scale: Data on parental behavior constructs were collected using the Pittsburgh Youth Study (PYS) and assessed youth and caregiver reports separately (Loeber, Stouthamer-Loeber, Van Kammen, & Farrington, 1991). The parenting scale looked at three main constructs: lack of supervision (five items for caregiver scale and six items for youth scale), lax discipline (seven items for both caregiver and youth scales), and poor communication about the youth's activities (four items for caregiver scale and five items for youth scale). All of these items use a Likert scale, with higher values for the communication and supervision scales suggesting better outcomes, and suggesting poorer outcomes for the lax discipline scale. For ease of interpretation, lax discipline was reverse coded so that higher scores meant better discipline. Additionally, since the parent and youth versions for

communication and supervision included a different number of items, we transformed the sum scores in such a way that the maximal score was the same for the youth and caregiver versions of PYS. This made it possible to easily compare sum scores for youth and caregiver reports of communication and supervision, now reported on the same continuous scale. The scales for communication, supervision and discipline demonstrated good reliability and construct validity in the Pittsburgh youth study (Loeber & Farrington, 1998; Loeber et al., 2001).

Family Adaptability and Cohesion Scales – III: Both the caregiver and the youth assess family relations by completing a 20-item questionnaire. FACES-III (Olson, Portner, & Lavee, 1985) evaluates family adaptability and cohesion from the youth and caregiver perspective. All items are assessed on a Likert scale, with responses ranging from 1 (almost never) to 5 (almost always). Cohesion is calculated as the sum of odd items, with higher scores suggesting that the family is more enmeshed. Adaptability is calculated as the sum of even items, with higher scores suggesting a more chaotic family life. For ease of interpretation, we reversed the order of values for adaptability. By reversing the values for adaptability, scores for adaptability and cohesion follow a similar direction, meaning that higher scores on both constructs reflect better family adaptability and cohesion. FACES-III has been used in studies with general delinquency and violent offenders (Blaske, Borduin, Henggeler, & Mann, 1989; Rodick, Henggeler, & Hanson, 1986). Henggeler et al. assessed the internal consistency of FACES-II using a sample of 151 male adolescent repeat offenders, young adult prisoners and adolescent non-offenders between the ages of 12 and 24 (Henggeler, Burr-Harris, Borduin, & McCallum, 1991). FACES-II showed good internal consistency with coefficient alphas corresponding to 0.87 and 0.80 for cohesion and adaptability scales respectively, and test-retest reliabilities corresponding to 0.83 and 0.80.

Missing Data

Examining patterns of missing data, we found missingness for income, communication, supervision and discipline. We adjusted for missing data by using the full-information maximum-likelihood (FIML) estimation. FIML is considered an appropriate method for handling data that is assumed to be missing at random (Schafer & Graham, 2002). A description of the amount of missingness and how we handled it follows.

Independent variable: Based on the descriptive statistics of demographic variables, only one caregiver failed to report income, corresponding to 0.78% of the sample. Income data is usually not missing at random (NMAR) because individuals with lower or higher income are more likely to omit reporting this information (Tsikriktsis, 2005). Therefore, we did not impute income data, and the individual with missing data was subsequently dropped from analyses that included income using listwise deletion.

Dependent variables: Based on descriptive statistics of parenting practices, five caregivers and two youths had 1 item missing for their report of supervision, and one youth had 1 item missing for the report of lax discipline. Additionally, 18 items (10 for communication and 8 for supervision) were scored as “don’t know” on the PYS youth report across 13 respondents, compared to only one answer of “don’t know” from the PYS caregiver report (communication). Since answers of “don’t know” yielded no useful information about parenting strategies, we recoded these answers as missing. These data were assumed to be missing at random (MAR), in other words, patterns of missingness were considered random after adjusting for observed covariates (Rubin, 1976). For MAR data, we performed a simple imputation using the average of available data for each individual. If more than 50% of the items for a particular construct were left unanswered, we left the data

as missing, and did not impute. This resulted in us dropping (because the data was missing) two youth reports for communication and one youth report for supervision.

Analyses

All data were analyzed using Stata version 12.0 (StataCorp, 2011). We conducted descriptive analyses to assess the distribution and normality of outcome variables and to graph relationships between variables.

Aim 1.1: The goal of aim 1 was to determine how best to assess parenting practices using available youth and caregiver reports on multiple assessment instruments. Using FACES-III and PYS, we compared youth and caregiver reported parenting practices using three methods. First, we compared sum scores for the 5 parenting practices from youth and parent reports. The internal consistency of youth and caregiver reports were assessed using Cronbach's alpha and inter-rater agreement was evaluated with intraclass correlation coefficients (two-way random effects, absolute). According to Peterson, a scale reliability of 0.70 or higher is considered acceptable (Peterson, 1994). However, there is no universal standard for defining ICC as good, medium or low (Shrout, 1998; Weir, 2005). We also performed the Wilcoxon sign rank test, for non-parametric paired data, to test the null hypothesis that the summed scores for youth and parents are different. Second, for each individual, we looked at the consistency of responses across all 5 parenting constructs by dividing parenting constructs into lowest, middle and highest tertiles. We assessed whether participants tended to report high/medium or low scores across all 5 parenting practices. We did this for caregivers and youths separately and then compared consistency of responses for both groups. Third, we assessed the magnitude of difference between the youth and caregiver reports, and visualized the difference as histograms. Looking at the histograms of the difference between caregiver and youth report for each of the parenting constructs

allowed us to assess bias of responses. Based on these three methods, decisions were made as to which informant's data (caregiver versus adolescent) to use for subsequent analyses.

Aims 1.2 and 1.3: By creating sum scores for all 5 parenting practices, we modeled all dependent variables as continuous. The independent variables were modeled as categorical variables. We assessed pairwise correlations to examine the extent of collinearity among all predictors. Two predictor variables were considered highly collinear if their correlation was greater than 0.8 (Mason & Perreault, 1991). Stepwise linear regression models were independently fit for all 5 parenting practices as dependent variables, including all caregiver characteristics one by one (forward selection method) to demonstrate the relative contribution of each of these variables to the outcome variable. Thus, caregiver age, gender, race/ethnicity, family structure, level of education, household income, financial income and the relationship of the caregiver to the youth (aim 1.3) were entered one-by-one into the simple linear regression models. After running the univariate linear regression models, we included statistically significant predictor variables into the multivariate regression models. Only variables that had a p-value ≤ 0.05 were included in the final multiple linear regression model. We considered using the Bonferroni correction to counteract the problem of multiple comparisons. Since Bonferroni tests each individual hypothesis at a significance level of $1/n$ (with n being the number of independent variables in the model), we decided that using Bonferroni would be too conservative (Perneger, 1998). Following the multivariate regressions, we ran post-hoc comparisons to identify which pairs of the factor levels were significantly different from each other. Finally, we looked at the correlation of dependent variables to assess the need for examining multiple outcome variables concurrently.

For aim 1.3, we assessed whether the caregiver's relationship to the youth (mother/father/ other) affected any of the five parenting outcomes. We accounted for changes in caregivers over time by creating two interaction terms between relationship of caregiver to youth and caregiver turnover. We entered two interaction terms (relationship to youth X caregiver in the past 3 months (yes/no) and relationship to youth X number of caregivers (count) in the youth's lifetime) into the model to assess whether caregiver turnover influenced the relationship between the caregiver's relationship to the youth and parenting practices. We hypothesize that caregiver turnover will modify the effect of the relationship of caregiver to youth and parenting practices.

Results

This section will present caregiver characteristics, followed by the results of the analyses by aim. Tables summarizing the results of the analyses will be included for each step.

Caregiver characteristics: The mean age for the caregiver was 43.05 years (SD = 9.97) with a range of 29 to 73. Only 15.75% (n=20) of primary caregivers were male. More than half of the caregivers were Black, non-Hispanic (52.38%). The most common family structure was a single-parent family (n=59; 46.46%). Nearly half (48.83%; n=59) of the sample lived below the poverty threshold. Additionally, 40.94% (n=52) of caregivers earned less than a high school degree. Complete caregiver demographic information is summarized in Table 4.1.

Table 4.1. Caregiver Demographic Characteristics (n=127)

| CAREGIVER DEMOGRAPHICS | | | |
|-----------------------------------|-----------------------|-----|-------|
| | | N | % |
| Age in years | | | |
| | 23-37 | 42 | 33.07 |
| | 38-45 | 43 | 33.86 |
| | 46-73 | 42 | 33.07 |
| Gender | | | |
| | Male | 20 | 15.75 |
| | Female | 107 | 84.26 |
| Race/ethnicity | | | |
| | White, non-Hispanic | 22 | 17.46 |
| | Black, non-Hispanic | 67 | 52.76 |
| | Hispanic | 38 | 29.92 |
| Relationship to youth | | | |
| | Mother | 83 | 65.35 |
| | Father | 19 | 14.96 |
| | Other | 25 | 19.69 |
| Family structure | | | |
| | Two-parent family | 30 | 23.62 |
| | Single-parent family | 59 | 46.46 |
| | Stepparent family | 15 | 11.81 |
| | Other family | 23 | 18.11 |
| Poverty status | | | |
| | Below poverty line | 59 | 46.83 |
| | At poverty threshold | 20 | 15.87 |
| | Above poverty line | 47 | 37.30 |
| Highest level of education | | | |
| | Less than high school | 52 | 40.94 |
| | High school degree | 34 | 26.77 |
| | Some college | 41 | 32.28 |

Note: The other category consists of foster parents and non-parental relatives (2 are male and 23 are female). The stepparent family consists of one natural/adoptive parent and one stepparent. The other family category includes youth who live with non-parental and non-relative caregivers.

Aim 1: Comparing Youth and Caregiver Reports of Parenting Practices

Comparing sum scores for each parenting construct: The internal consistency of PYS and FACES-III items for both youth and parent report was adequate to good for all five parenting constructs, with Cronbach's alpha ranging from 0.53 to 0.79 for youth, and from 0.59 to 0.80 for caregivers. Results are presented in Table 4.2. Scale reliability is

marginally higher for caregivers for adaptability, cohesion, communication and lax discipline. Youth reports of supervision are marginally more reliable than parent reports.

Table 4.2. Internal Consistency for Items in the Youth and Parent Report

| Construct | Cronbach's alpha | |
|------------------|-------------------------|------------------|
| | Youth | Caregiver |
| Adaptability | 0.53 | 0.62 |
| Cohesion | 0.75 | 0.80 |
| Communication | 0.79 | 0.80 |
| Supervision | 0.66 | 0.63 |
| Lax Discipline | 0.55 | 0.59 |

Comparisons of caregiver and youth reports reveal that mean scores for cohesion, communication and supervision were slightly higher for caregiver reports, as compared to youth reports. Results are presented in Table 4.3. Across all 5 parenting constructs, sum scores from caregiver reports were 7.5% higher than sum scores youth reports. There was more agreement between youth and caregiver reports for family adaptability and discipline. The Wilcoxon signed rank test, a non-parametric test comparing youth and caregiver reports for parenting practices, revealed that the difference between raters (per pair) was significantly different from zero for cohesion, communication and supervision, meaning that agreement is poor for these constructs. The intraclass correlation coefficients, two-way random effects, absolute or ICC (2,1), showed little agreement between youth and caregiver reports for all parenting practices, with ICC values ranging from 0.00 to 0.32.

Table 4.3. Comparative Analyses for Youth and Caregiver Reports

| Construct | Youth | | Caregiver | | Signed rank p-value | ICC | 95% CI |
|----------------|--------------|--------|--------------|--------|------------------------|------|-----------------|
| | Mean (SD) | Median | Mean (SD) | Median | | | |
| Adaptability | 35.81 (5.02) | 36 | 35.33 (5.83) | 36 | 0.84 | 0.10 | (-0.074; 0.217) |
| Cohesion | 32.74 (6.61) | 32 | 37.91 (7.00) | 39 | 0.00 | 0.07 | (-0.066; 0.217) |
| Communication | 12.46 (3.32) | 13.18 | 14.57 (2.07) | 16 | 0.00 | 0.15 | (-0.014; 0.308) |
| Supervision | 12.34 (2.36) | 12.63 | 13.8 (1.67) | 14 | 0.00 | 0.32 | (0.044; 0.531) |
| Lax Discipline | 15.13 (2.18) | 15 | 14.97 (1.48) | 15 | 0.38 | 0.00 | (-0.175; 0.173) |

Consistency of responses: We looked at consistency of responses across all 5 parenting constructs by dividing parenting constructs into lowest, middle and highest tertiles. Across all five parenting constructs, thirty-one caregivers (24.4%) reported four times the same range of response (low, medium or high), as compared to 21 (16.5%) youths. Three caregivers (2.4%) and 3 youths (2.4%) each reported five times the same range of response. Although these results remain descriptive, caregivers showed more consistent responses across all five parenting constructs.

Magnitude of difference: Finally, we assessed the qualitative differences in responses between caregiver and youth responses. Caregivers on average scored higher on cohesion, communication and supervision. Responses for cohesion showed the greatest variability between caregivers and youths with an average difference in score of 5.16 (SD = 9.17). Histograms of the difference between caregiver and youth report for each of the parenting practices are normally distributed (data not presented), indicating that youth and caregivers are just as likely to report scores on either side of the average difference suggesting no biases in responses. Results are reported in Table 4.4.

Table 4.4. Comparing the Difference in Responses (Caregiver – Youth)

| Construct | Average difference | SD | 95% CI |
|---------------|--------------------|------|-----------------|
| Adaptability | -0.48 | 7.29 | (-14.72; 13.81) |
| Cohesion | 5.16 | 9.17 | (-12.81; 21.14) |
| Communication | 2.1 | 3.42 | (-4.61; 8.81) |
| Discipline | -0.61 | 2.63 | (-5.32; 4.99) |
| Supervision | 1.46 | 1.92 | (-2.30; 5.22) |

Selection of informant: Based on our results, caregiver and youth reports showed little agreement as suggested by the Wilcoxon signed rank test and the intra-class correlation test. However, parent reports are slightly more reliable (based on Cronbach's alpha) and more consistent than youth reports, based on descriptive statistics showing trends in responses. Additionally, the histogram of the difference between youth and caregiver response is normally distributed, implying that there is no bias in the direction responses. We acknowledge that the information provided by youth and caregivers is different. Indeed, youth reports of parenting practices reflect their own perceptions of the world. As was presented in a recent meta-analysis on parenting and delinquency, adolescents were more likely to report negative aspects of parenting to demonstrate their independence from parents, and this was particularly true for delinquent youth who tend to have pessimistic worldviews (Hoeve et al., 2009). For the purpose of this dissertation, we selected caregiver reports because the ultimate goal is to be able to make recommendations for improved parenting practices that will facilitate the successful reintegration of JSO into society.

Aims 1.2 and 1.3: Variations in Parenting Practices by Caregiver Characteristics

From this point on, we only used caregiver reports for information about parenting practices. Results from the univariate linear regression models are presented in Table 4.5, and the results from the multivariate linear regression models and the pairwise post hoc comparisons are presented in Table 4.6. The distribution of the summed scores for

communication and supervision (caregiver reports) were positively skewed so we used a log-transformation to help fit these variables into the model. In both instances, log transforming the summed scores for supervision and communication made the positively skewed distributions more normal. Additionally, the predictor variables exhibiting the highest degree of collinearity were caregiver education and race/ethnicity (0.53). Since none of the variables were considered highly collinear (>0.8), we included all significant predictor variables in the multivariate regression analyses.

Based on the results of the univariate linear regression, the age and race/ethnicity of the caregiver were statistically significantly associated with the communication scale score but not with any of the other parenting scales. Gender was not significantly associated with any of the parenting constructs. Both family structure and poverty status were significantly associated with cohesion and supervision. Caregiver education was significantly associated with cohesion and communication, and relationship to youth was only significantly related to discipline. The variable “relationship to youth” was included in the **Table 4.5** for consistency, although this pertains to aim 1.3. In **Table 4.5**, results in bold indicate that at least one of the pairwise comparisons are significant at $p<0.05$.

Table 4.5. Results of Univariate Linear Regressions

| Results of univariate linear regressions [mean score (SE)] | | | | | | |
|--|--------|--------------|--------------|---------------------|--------------|--------------|
| | | Adaptability | Cohesion | Communication | Discipline | Supervision |
| Age | 23-37 | 35.23 (0.90) | 38.86 (1.08) | 15.14 (0.21) | 14.90 (0.23) | 13.98 (0.24) |
| | 38-45 | 35.84 (0.89) | 37.28 (1.07) | 14.14 (0.37) | 15.02 (0.23) | 13.81 (0.26) |
| | 46-73 | 34.90 (0.90) | 37.60 (1.08) | 14.43 (0.32) | 14.98 (0.23) | 13.60 (0.26) |
| | | | | | | |
| Gender | Male | 36.35 (1.30) | 39.35 (1.56) | 14.45 (0.42) | 15.2 (0.33) | 14 (0.28) |
| | Female | 35.14 (0.56) | 37.63 (0.68) | 14.59 (0.20) | 14.92 (0.14) | 13.76 (0.17) |

| | | | | | |
|------------------------------|--------------|---------------------|---------------------|---------------------|---------------------|
| Race/ethnicity | | | | | |
| White, non-Hispanic | 36 (1.23) | 39.36 (1.49) | 15.60 (0.24) | 14.77 (0.32) | 13.91 (0.31) |
| Black, non-Hispanic | 36.07 (0.70) | 36.98 (0.85) | 14.40 (0.27) | 15.04 (0.18) | 13.55 (0.20) |
| Hispanic | 33.63 (0.94) | 38.68 (1.13) | 14.26 (0.32) | 14.95 (0.24) | 14.16 (0.27) |
| Family structure | | | | | |
| Two-parent family | 35.37 (1.07) | 39.77 (1.27) | 14.53 (0.38) | 14.93 (0.27) | 14.37 (0.20) |
| Single-parent family | 35.32 (0.77) | 36.62 (0.91) | 14.54 (0.26) | 14.81 (0.19) | 13.52 (0.25) |
| Stepparent family** | 34.67 (1.52) | 37.67 (1.80) | 15.33 (0.29) | 14.6 (0.38) | 14.13 (0.27) |
| Other family*** | 35.74 (1.23) | 38.91 (1.45) | 14.17 (0.51) | 15.65 (0.30) | 13.52 (0.33) |
| Poverty status | | | | | |
| Below poverty line | 34.73 (0.76) | 36.61 (0.90) | 14.25 (0.31) | 15 (0.19) | 13.37 (0.25) |
| At poverty threshold | 36.15 (1.31) | 37.55 (1.55) | 14.9 (0.27) | 14.85 (0.33) | 14.10 (0.25) |
| Above poverty line | 35.64 (0.85) | 39.53 (1.01) | 14.81 (0.28) | 14.98 (0.22) | 14.17 (0.19) |
| Education level | | | | | |
| Less than high school | 34.48 (0.81) | 36.36 (0.96) | 13.86 (0.33) | 14.88 (0.21) | 13.54 (0.26) |
| High school degree | 36 (1.00) | 39.62 (1.19) | 14.44 (0.35) | 14.85 (0.25) | 13.91 (0.24) |
| Some college | 35.85 (0.91) | 38.44 (1.08) | 15.56 (0.16) | 15.17 (0.23) | 14.02 (0.23) |
| Relationship to youth | | | | | |
| Mother | 34.98 (0.64) | 37.20 (0.77) | 14.74 (0.21) | 14.80 (0.16) | 13.86 (0.19) |
| Father | 35.79 (1.34) | 40.05 (1.60) | 14.52 (0.44) | 15.05 (0.26) | 14.10 (0.30) |
| Other* | 36.16 (1.17) | 38.6 (1.40) | 14.04 (0.52) | 15.48 (0.29) | 13.36 (0.33) |

Note. * The other category consists of foster parents and non-parental relatives (2 are male and 23 are female). ** The stepparent family consists of one natural/adoptive parent and one stepparent. *** The other family category includes youth who live with non-parental and non-relative caregivers.

Building on the results from the univariate regressions, all statistically significant predictor variables (at $p < 0.05$) were entered into the multivariate regressions. The multivariate analyses were followed by pairwise post-hoc comparisons. As shown in **Table 4.6**, family structure (single versus two-parent family) and caregiver education (high school degree versus less than high school) remained significantly associated with cohesion. Age (46-73 and 38-45 versus 23-37 years old), race/ethnicity (Black, non-Hispanic versus White, non-Hispanic) and caregiver education (high school degree and some college versus less than high-school) remained significantly associated with communication. Relationship to youth (other versus mother) was significantly associated with discipline and family structure (single versus two-parent family) was significantly related to supervision. None of the predictor variables tested were associated with adaptability. Finally, the most strongly correlated

outcomes were cohesion and supervision (0.44). Since the correlation was less than 0.8 (Mason & Perreault Jr, 1991), we decided not to look at multiple outcomes simultaneously because the outcomes were poorly correlated (Mason & Perreault Jr, 1991). Both interaction terms (relationship to youth X caregiver in the past 3 months, relationship to youth X number of caregivers in the youth's lifetime) were non-significant ($p = 0.10$ and 0.12 respectively) when entered into the model with relationship of caregiver to youth (predictor variable) and discipline (outcome).

Table 4.6. Results of Multivariate Linear Regressions and Post-Hoc Comparisons

| Results of multivariate linear regressions [mean score (SE)] | | | |
|---|----------------------------|------------------------|-----------------------------|
| Outcome | Predictor variables | Mean score (SE) | Pairwise comparisons |
| Adaptability | --- | --- | --- |
| Cohesion | Family structure | | |
| | Two-parent family (1) | 40.05 (1.30) | (2) versus (1) ° |
| | Single-parent family (2) | 36.66 (0.91) | |
| | Stepparent family (3) | 37.14 (1.81) | |
| | Other family (4) | 38.51 (1.47) | |
| | Poverty status | | |
| | Below poverty line (1) | 37.16 (0.91) | None |
| | At poverty threshold (2) | 37.53 (1.56) | |
| | Above poverty line (3) | 38.85 (1.03) | |
| | Caregiver education | | |
| | Less than high school (1) | 36.05 (0.99) | (2) versus (1) ° |
| | High school degree (2) | 39.61 (1.19) | |
| | Some college (3) | 38.63 (1.10) | |
| Communication | Age | | |
| | 23-37 (1) | 15.18 (0.23) | (2) versus (1) ° |
| | 38-45 (2) | 14.08 (0.33) | (3) versus (1) ° |
| | 46-73 (3) | 14.46 (0.27) | |
| | Race/ethnicity | | |
| | White, non-Hispanic (1) | 15.26 (0.27) | (2) versus (1) ° |
| | Black, non-Hispanic (2) | 14.18 (0.27) | |
| | Hispanic (3) | 14.86 (0.36) | |
| | Caregiver education | | |
| | Less than high school (1) | 13.85 (0.34) | (3) versus (1) ° |
| | High school degree (2) | 14.55 (0.34) | |
| | Some college (3) | 15.50 (0.25) | (3) versus (2) ° |

| | | | |
|--------------------|------------------------------|---------------------|-------------------------|
| Discipline | Relationship to youth | | |
| | Mother (1) | 14.80 (0.16) | (3) versus (1) ° |
| | Father (2) | 15.05 (0.34) | |
| | Other (3) | 15.48 (0.29) | |
| Supervision | Family structure | | (2) versus (1) ° |
| | Two-parent family (1) | 14.22 (0.22) | |
| | Single-parent family (2) | 13.61 (0.23) | |
| | Stepparent family (3) | 14.08 (0.28) | |
| | Other family (4) | 13.47 (0.34) | None |
| | Poverty status | | |
| | Below poverty line (1) | 13.44 (0.24) | |
| | At poverty threshold (2) | 14.05 (0.25) | |
| | Above poverty line (3) | 14.10 (0.97) | |

Note: (1) Indicates the groups within the predictor variables. For example, (2) versus (1) ° for family structure indicates that there is a significant difference in supervision comparing a single parent to a two-parent family.

Discussion

The current study examined the relationship between parenting characteristics and parenting practices (reported by the caregiver) among a sample of juveniles who sexually offended and their caregivers. In sum, we found that caregiver reports were overall more reliable and consistent, although it is clear from the analyses that youth and caregiver reports capture different information. We made the decision to use caregiver reports for all future analyses. Consistent with the work by Graves and colleagues, most of the JSO in our sample come from single-parent families (46.46%), most often headed by a female caregiver (Graves et al., 1996). Living with a single parent was significantly associated with lower scores for cohesion and supervision when compared to a youth being raised in a two-parent household. The difference between single parent and two-parent families may reflect the amount of time the caregiver has available to spend with the youth (Astone & McLanahan, 1991). Moreover, a single parent is more likely to struggle financially owing to the fact that he/she is the only bread-winner in the family, resulting in more time at work and less time engaging with the youth (Carlson & Corcoran, 2001). It seems that the number of adults in the household may

be key to understanding the relationship between family structure and supervision (Cookston, 1999). Having at least two adults in the household allows for sharing of parenting responsibilities, including better supervision of the youth's whereabouts.

Being reared in a single-parent family versus a two-parent family was significantly associated with lower family cohesion and poorer supervision. Caregiver education was significantly associated with higher cohesion and better communication. Results suggested that younger caregivers communicated better with their children as compared to older caregivers. It was also unexpected that when the caregiver was a foster parent or non-parental relative, scores for supervision were higher than when the caregiver was a mother. Some possible explanations of these results are presented in the following section.

In this study, 46.83% of families of JSO fell below the poverty line. Consistent with findings from other studies, JSO tended to be from lower SES groups (Graves et al., 1996; Van Wijk, Loeber, Vermeiren, Pardini, Bullens, & Doreleijers, 2005). When we tested the relationship between poverty and parenting practices, we found that poverty was not significantly associated with poor family cohesion and poor supervision. Therefore, poverty status was not found to be predictive of these poor parenting practices. We did find that higher caregiver education was significantly related to both better family cohesion and communication. However, none of the parental characteristics that we tested were significant when we used family adaptability as the outcome variable. One explanation is that changes in family adaptability are only noticeable long-term since the measure of family adaptability captures the family's aptitude to shift its structure, roles and relationships in response to developmental changes and stressors over time. Given that we are only using baseline data, we may not have the data necessary to detect any difference in adaptability based on caregiver characteristics.

There were two surprising results in this study. First, having a foster parent or non-parental relative (other caregiver) as a primary caregiver was associated with more discipline compared to having a mother as a primary caregiver. Since the other caregiver category is composed of 23 females and 2 males, it is not the gender of the caregiver that is affecting discipline (we tested this relationship and found it to be non-significant). Perhaps being a step removed from the juvenile (i.e. not the direct mother) allows the other caregiver to be more authoritative and less emotionally involved with the youth, making it easier to discipline the juvenile who has already exhibited delinquent behaviors. The level of discipline could be a function of the amount of time mothers spend with the youth, as they are often the primary caregivers even when they work (Biernat & Wortman, 1991).

Second, younger caregivers demonstrated better communication skills with the JSO. One hypothesis to explain this relationship is that younger caregivers are closer in age and therefore share more of the same interests. In the context of a study on parental age and the transmission of resources to children, Powell and colleagues found that younger parents are able to communicate better with their children because they are closer in age (Powell, Steelman, & Carini, 2006). Perhaps children feel closer to younger caregivers and are able to confide in them. Although this seems like a plausible explanation, more research is needed to assess the validity of the relationship between younger caregivers and better communication.

Limitations

First, study results cannot necessarily be generalized to juveniles who commit non-sexual offenses. Although JSO share many characteristics with other juvenile delinquents (see chapter 2 for more information about shared characteristics), there is no literature comparing the parenting practices of caregivers of JSO with caregivers of non-sex offenders. We cannot extend our results to general juvenile delinquents, thus limiting the external

validity of our study. Second, we only account for parenting strategies of the primary caregiver. However, we acknowledge that when multiple caregivers are involved, parenting strategies may be split between the caregivers (Hunter et al., 1998). For future studies, it may be useful to collect data on how parenting responsibilities are shared among different caregivers within the household. Third, we utilize cross-sectional data only and cannot assess whether poor parenting practices preceded or followed the sexual offenses committed by the juveniles. Information about the temporality of this relationship would have been useful to investigate if and how caregivers modified their parenting practices in response to the sexual offenses. Fourth, we did not account for the multiple comparisons in our regression analyses. We considered using the Bonferroni correction to counteract the problem of multiple comparisons, but this proved to be too conservative. We also contemplated using a p-value of 0.01 for the regression analyses, but found no significant associations when doing so. Given the small sample size ($n=127$) and the exploratory nature of this study, we used a p-value of 0.05. This allowed us to start assessing the relationship between parental characteristics and parenting practices. Conclusions from this study should be drawn with these limitations in mind.

Conclusion

In conclusion, we found that a number of caregiver characteristics were significantly related to parenting practices among a sample of juveniles who sexually offend and their caregivers. Although these results remain exploratory, it is helpful to understand how parenting demographics affect parenting practices within our broader efforts to make recommendations for improving parenting practices that will facilitate JSO re-entry into the community. Parenting practices can be modified with the proper support and training, but demographic characteristics are static. We argue that having a better understanding of the

socio-cultural context will enable us to make recommendations that are more in-tune with the needs of caregivers of JSO. Hopefully, these culturally sensitive messages will resonate better with the caregivers who are in a position to support JSO once they are rehabilitated into the community.

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CHAPTER 5: VARIATIONS IN PARENTING PRACTICES BY YOUTH HISTORY OF VICTIMIZATION

Overview

As introduced in chapter 1, we will use Bronfenbrenner's Ecological Systems Theory (Bronfenbrenner, 1979) as a framework to understand the complexities of juvenile sexual offending (Swenson, Henggeler, Schoenwald, Kaufman, & Randall, 1998). This framework discerns the various individual and family level factors that affect sexually offensive behaviors. In chapter 4, we looked at the family context of juvenile sexual offending. Building on chapter 4, this section will examine the individual context of juvenile sex offending by looking at youth victimization history.

Introduction

A recent meta-analysis by Seto and Lalumière (2010) revealed that on average, 46% of juveniles who sexually offend were victims of sexual abuse themselves, as compared to 16% of non-sex offenders. Childhood victimization, including physical, sexual or emotional abuse is a well-validated risk factor for the development of delinquency (Malinosky-Rummell & Hansen, 1993; Scudder, Blount, Heide, & Silverman, 1993; Stewart, Waterson, & Dennison, 2002). In a prospective longitudinal study, Stouthamer-Loeber and her colleagues found that high-risk boys with a history of abuse or neglect were more likely to exhibit delinquent behaviors and encounter problems with authorities as compared to high-risk boys without a history of abuse or neglect (Stouthamer-Loeber, Loeber, Homish, & Wei, 2001). Another longitudinal study found that children who were physically abused by the age of 5 were more likely to be arrested for violent, nonviolent and status offenses during late adolescence or early adulthood (Lansford et al., 2007).

The primary objective of this study is to understand the mechanism by which youth victimization history affects the relationship between parenting practices and delinquency in a sample of juveniles who sexually offended. Specifically, we will test if history of youth victimization moderates the relationship between parenting practices and delinquency. The following sections will summarize the literature on victimization, parenting and delinquency.

History of Victimization

History of Victimization and Delinquency

Several hypotheses have been put forth to explain the victimization-delinquency link. Ford and colleagues (2006) describe a chronological pathway leading from early victimization to problems with emotional regulation and information processing (often expressed as depression, anxiety, social isolation and peer rejection), which result in aggressive behaviors (Ford, Chapman, Mack, & Pearson, 2006). Ford and colleagues call for teaching emotional regulation and information processing as one method of preventing re-offending behaviors (Ford et al., 2006). Using longitudinal data, Hay and Evans argue that victimization should be construed as a cause, rather than correlate or outcome of adolescent delinquency. They found the victimization-delinquency relationship to be partially mediated by the child's feelings of anger (Hay & Evans, 2006).

Using two waves of data, Manasse and Ganem explored the victimization-delinquency relationship, assessing to what extent depression both mediated and moderated that relationship (Manasse & Ganem, 2009). Depression did not emerge as a mediator of the victimization-delinquency relationship. However, male adolescents who experienced depression were 50% more likely to exhibit delinquent behaviors following victimization, as compared to males with no history of depression (Manasse & Ganem, 2009). Recent research has also highlighted the relationship between childhood physical, emotional and

sexual abuse and neglect and damaging changes to the youth's neurological development (Cellini, 2004). Abnormal neuro-developmental patterns can lead to serious problems with self-control, memory, emotion, moral reasoning, resulting in an increased likelihood of delinquent behaviors over the life-course (Perry, Pollard, Blakley, Baker, & Vigilante, 1995).

Parenting Practices, History of Youth Victimization and Delinquency

Using the National Longitudinal Study of Adolescent Health, Aceves and colleagues (2007) found that the quality of the parent-youth relationship was found to buffer the effect of violent victimization on subsequent violent aggression. Further analyses revealed that the buffering effect of parent-youth relationships was valid only for male adolescents (Aceves & Cookston, 2007). A study of Hispanic and African American youth residing in high-crime neighborhoods of Los Angeles assessed the temporal relationship between victimization and violent behaviors (Walker, Maxson, & Newcomb, 2007). Walker and her colleagues found that violent behavior preceded direct victimization, and that these two constructs were strongly associated. This same study found that parental attachment was associated with lower levels of violent behaviors for Latino youth, concluding that race moderated the relationship between attachment with parents and violent behavior (Walker et al., 2007).

Parenting Practices and Delinquency

The link between parenting and delinquency is well established in the juvenile delinquency literature and has been validated across multiple demographic groups and study designs (Chung & Steinberg, 2006; Hoeve et al., 2009). Parenting factors are critical in promoting prosocial norms and values from infancy to early school age years (Kochanska, 1997; Kochanska, 2002; Pardini, Loeber, & Stouthamer-Loeber, 2005). Positive parenting practices, such as consistent and fair parental discipline, open communication and supportive parent-child relationships, are associated with an increased likelihood that the

youth will adopt prosocial values (Carlo, Fabes, Laible, & Kupanoff, 1999; Laible & Thompson, 2002). Conversely, negative parent-child exchanges, low family cohesion and harsh discipline may discourage the youth from internalizing prosocial values (Hastings, Zahn-Waxler, Robinson, Usher, & Bridges, 2000; Pettit, Laird, Dodge, Bates, & Criss, 2001). In turn, youth endorsement of antisocial values has been associated with subsequent aggression and delinquent behaviors during early and middle adolescence (Heimer & Matsueda, 1994; Thornberry, Lizotte, Krohn, Farnworth, & Jang, 1994; Zhang, Loeber, & Stouthamer-Loeber, 1997).

A recent meta-analysis of 161 studies assessed the association and magnitude of the relationship between parenting and delinquency (Hoeve et al., 2009). Findings revealed that lack of parental monitoring, rejection, hostility, neglect and psychological control were the strongest predictors of delinquency, and that the parenting-delinquency link was stronger in school age children and early adolescents as compared to older adolescents (Hoeve et al., 2009). The proposed study will assess five parenting practices: communication, discipline, supervision, family cohesion and family adaptability. To avoid redundancy, we refer the reader to chapter 2 for specific information about how each of these parenting practices is related to delinquency.

The Current Study

The literature has established a clear relationship between victimization history and delinquency although there is an ongoing debate about whether victimization precedes delinquency or vice versa (Ford et al., 2006; Lansford et al., 2007; Malinosky-Rummell & Hansen, 1993; Scudder et al., 1993; Stewart et al., 2002). Several studies have looked at the relationship between parenting, victimization history and juvenile delinquency (Aceves & Cookston, 2007; Walker et al., 2007), but to the best of our knowledge, no study has tested

whether youth victimization history moderates the relationship between parenting and juvenile non-sexual delinquency. This study will test if history of victimization (none, one type, more than one type of abuse) moderates the relationship between parenting practices and delinquency (general and/or school delinquency). Using data from a randomized controlled trial, we utilized baseline cross-sectional data from 127 juveniles who sexually offended and their caregivers. One third of the sample of JSO committed both sexual and non-sexual offenses per juvenile justice records.

Methods

This section offers an overview of the sample, instruments, missingness and analytical techniques used. Please refer to chapter 3 for more information about the trial research design, inclusion/exclusion criteria, recruitment procedure, instruments, missingness, power analysis and statistical methods. The decision to use only the caregiver reports of parenting practices in chapter 4 will be carried out throughout this dissertation.

Sample

Data for this dissertation comes from a 2004-2006 study entitled: “Effectiveness trial: multisystemic therapy (MST) with juvenile offenders”. Juveniles who committed a sexual offense were enrolled into the study with a caregiver. Juveniles (n=127) ages 11 to 18 were randomly assigned to one of two treatment conditions: multisystemic therapy (MST) adapted for JSO, or treatment as usual (TAU) for JSO, offered by the juvenile sexual offender unit of the juvenile probation department. A stratified permuted blocks randomization (McEntegart, 2003) was used to prevent chance imbalance across important study variables. The youth sample was 97.64% (n=124) male and 2.36% (n=3) female. At

baseline, the mean age of the youth was 14.63 (SD = 1.73). We use only the baseline cross-sectional data for this paper.

Study Variables

The Parenting Scale: Data on parenting constructs were collected using the Pittsburgh Youth Study (PYS) and assessed youth and caregiver reports separately (Loeber, Stouthamer-Loeber, Van Kammen, & Farrington, 1991). However, we used only caregiver reports based on the results of chapter 4. The parenting scale looked at three main constructs: lack of supervision, lax discipline, and poor communication about the youth's activities. There is no time frame for the items in this scale. All of these items use a Likert scale, with higher values for the communication and supervision scales suggesting better outcomes and suggesting poorer outcomes for the lax discipline scale. For ease of interpretation, lax discipline was reverse coded so that higher scores meant better discipline. The scales for communication, supervision and discipline demonstrated good reliability and construct validity in the Pittsburgh youth study (Loeber & Farrington, 1998; Loeber et al., 2001).

Family Adaptability and Cohesion Scales – III: FACES-III evaluates family adaptability and cohesion from the youth and caregiver perspective (Olson, Portner, & Lavee, 1985). We used only caregiver reports based on the results of chapter 4. There is no time frame for the items in this scale. All items are assessed on a Likert scale, with responses ranging from 1 (almost never) to 5 (almost always). Cohesion is calculated as the sum of odd items, with higher scores suggesting that the family is more enmeshed. Adaptability is calculated as the sum of even items, with higher scores suggesting a more chaotic family life. For ease of interpretation, we reversed the order of values for adaptability so that higher scores on both constructs reflect better family adaptability and cohesion. FACES-III has been used in

studies with general delinquency and violent offenders, and has shown good internal consistency and test-retest reliabilities (Blaske, Borduin, Henggeler, & Mann, 1989; Henggeler, Burr-Harris, Borduin, & McCallum, 1991; Rodick, Henggeler, & Hanson, 1986).

Self-reported Delinquency Scale (SRD): We used the SRD to assess the number of delinquent events in the past 90 days (Elliott, Ageton, Huizinga, Knowles, & Canter, 1983). The present study focused on two subscales of the SRD: the 35-item general delinquency subscale includes an array of criminal and delinquent activities, and the 8-item school delinquency subscale assessed school-related delinquent behaviors (e.g. cheating on school tests, truancy). We modeled general delinquency (0, 1-6, more than 6) and school delinquency (0, 1-3, more than 3) as categorical variables. Cut-offs were selected based on the mean number of general and school offenses, which were 6.17 and 3.35 respectively. The SRD is considered one of the best-validated instruments to assess self-reported delinquency (Thornberry & Krohn, 2000), with a mean coefficient alpha of 0.67 in the same sample of JSO as used in this study (Letourneau et al., 2009).

Adolescent Clinical Sexual Behavior Inventory (ACSBI): To assess history of victimization, we selected the items from ACSBI pertaining to victimization history (Friedrich, Lysne, Sim, & Shamos, 2004). We compared answers from the youth and caregiver reports on the following three items: Has the youth/ have you been sexually abused (been exposed to, touched or fondled against his/her will)? Has the youth/ have you been physically abused (hit hard, kicked, or punched by an adult/parent figure, excessive physical discipline)? Has the youth/ have you been emotionally abused (criticized, put down, ridiculed)? Answers were rated on a Likert scale, with responses ranging from 0 (not likely) to 4 (definitely). Given the preponderance of 0 responses, we considered that there was probably abuse if the caregiver and/or the youth answered anything other than 0 (not likely) to a history of abuse.

We created a poly-victimization to assess if the youth experienced none, one or several types of victimization. The ACSBI has demonstrated adequate reliability and validity in a sample of hospitalized adolescents (Friedrich et al., 2004), and in the same sample of JSO used in this study (Letourneau et al., 2009).

Missing Data

Looking at patterns of missing data, we found missingness for communication, and supervision. No data were missing for the ASBI or SRD scales. We adjusted for missing data by using the full-information maximum likelihood (FIML) estimation. FIML is considered an appropriate model for handling data that is assumed missing at random (Schafer & Graham, 2002). We explain below how we handled missingness for each scale.

The Parenting Scale: Based on descriptive statistics of parenting practices, five caregivers had one item missing for their report of supervision, and one answer was scored “don’t know” for the PYS caregiver report of communication. Since answers of “don’t know” yielded no useful information about parenting strategies, we recoded these answers as missing. These data were assumed to be missing at random (MAR), in other words, patterns of missingness were considered random after adjusting for observed covariates (Rubin, 1976). For MAR data, we performed a simple imputation using the average of available data for each individual. If more than 50% of the items for a particular construct were left unanswered, we left the data as missing, and did not impute. This resulted in us dropping (because the data were missing) one caregiver report for supervision.

Analyses

All data were analyzed using Stata version 12.0 (StataCorp, 2011). We conducted descriptive analyses to assess the distribution and normality of outcome variables and to graph relationships between variables.

We tested ten models to examine whether victimization moderated the relationship between five parenting practices and two types of delinquency (general and school). Parenting practices were modeled as continuous variables; general delinquency, school delinquency and poly-victimization were modeled as categorical variables. Moderation is said to exist if the influence of a predictor on an outcome differs across levels of the proposed moderator. Using ordered logistic regressions, we performed a series of hierarchical regression analyses to test whether victimization affected the strength and/or direction of the parenting-delinquency relation. Continuous predictor variables were centered to reduce multicollinearity (Aiken & West, 1991). In Step 1, we regressed general and school delinquency on the caregiver reports of their communication, discipline, supervision, family cohesion and adaptability (aim 2.1). In Step 2, we added the proposed moderator (poly-victimization) to the equation. In Step 3, we built on previous models by adding the interactions terms for victimization by parenting practices. Both the predictor and mediator variables in Step 2 and the interaction term in Step 3 should be significant for moderation to occur. Only significant interaction terms were retained in the final model for each outcome variable (Cohen, 1984). We then adjusted for potential confounding demographic factors based on the results from chapter 4. We controlled for caregiver age, gender, race/ethnicity, family structure, poverty status, education and relationship to youth. For more information about how these variables were coded, please refer to chapter 4.

Results

Sample characteristics: Approximately 62% (n=79) of the 127 juveniles enrolled in this study experienced some form of victimization per self- or parent-report, whether sexual only (n=5), physical only (n=4) or emotional only (n=32). Over a third of the sample (n=47) reported experiencing at least 2 types of abuse, with 15% (n=19) experiencing all three types

of abuse. About 64% of the sample reported committing some delinquent offense (n=67) and 53% reported committing a school-related offense. See information in **Table 5.1**.

Table 5.1. History of Victimization and Delinquency

| YOUTH CHARACTERISTICS | | |
|---|----------|----------|
| | N | % |
| History of victimization (n=127) | | |
| No history of abuse | 48 | 37.8 |
| One type of victimization | | |
| Sexually abuse | 5 | 3.94 |
| Physical abuse | 4 | 3.15 |
| Emotional abuse | 23 | 18.11 |
| Poly-victimization | | |
| Sexual and physical abuse | 1 | 0.79 |
| Sexual and emotional abuse | 12 | 9.45 |
| Physical and emotional abuse | 15 | 11.81 |
| Sexual, physical and emotional abuse | 19 | 14.96 |
| Delinquency (n=127) | | |
| School delinquency | | |
| No school offense | 60 | 47.24 |
| 1 to 3 school offenses | 39 | 30.71 |
| More than 3 school offenses | 28 | 22.05 |
| General delinquency | | |
| No delinquent offense | 46 | 36.22 |
| 1 to 6 delinquent offenses | 48 | 37.8 |
| 7 or more delinquent offenses | 33 | 25.98 |

Aim 2.1: Victimization history as moderator of parenting-delinquency relationship

Tests of moderation: Tables 5.2 and 5.3 contain the results of the hierarchical regression analyses for general and school delinquency respectively. There are five main effects of parenting variables on general and school delinquency, with a significant protective effect of family cohesion on both general (OR= 0.92, $p<0.001$) and school delinquency (OR= 0.94, $p<0.001$). Supervision had a protective effect on general (OR=0.80, $p<0.001$) and school delinquency (1.01, $p>0.05$), but this effect was significant only for general

delinquency. Family adaptability was positively associated with general (OR=1.03, $p>0.05$) and school delinquency (OR=1.03, $p>0.05$). For every unit increase in adaptability (OR=1.03, $p>0.05$), the odds of committing a general or school offense increased by 3%.

Table 5.2. Hierarchical Multiple Regression Analyses for General Delinquency

| | Variables | Step 1: | Step 2: | Step 3: | General R ² | |
|---|-----------------------------------|----------------|----------------|----------------|------------------------|--------|
| | | X → Y | X + M → Y | X + M + XM → Y | Step 2 | Step 3 |
| | Y: general delinquency | OR | OR | OR | | |
| 1 | X: communication | 0.94 | 0.91* | 0.94 | 0.072 | 0.073 |
| | M: victimization | | 2.39*** | 2.38*** | | |
| | XM: communication * victimization | | | 0.96 | | |
| 2 | X: discipline | 0.97 | 1.06 | 1.13 | 0.068 | 0.069 |
| | M: victimization | | 2.37*** | 2.37*** | | |
| | XM: discipline * victimization | | | 0.93 | | |
| 3 | X: supervision | 0.80*** | 0.83** | 1.13 | 0.079 | 0.098 |
| | M: victimization | | 2.29*** | 2.58*** | | |
| | XM: supervision * victimization | | | 0.76*** | | |
| 4 | X: cohesion | 0.92*** | 0.93*** | 0.95* | 0.094 | 0.095 |
| | M: victimization | | 2.13*** | 2.13*** | | |
| | XM: cohesion * victimization | | | 0.99 | | |
| 5 | X: adaptability | 1.03 | 1.02 | 1.05* | 0.069 | 0.072 |
| | M: victimization | | 2.30*** | 2.30*** | | |
| | XM: adaptability * victimization | | | 0.97 | | |

Note: * $p<0.05$, ** $p<0.01$, *** $p<0.001$, X: predictor variable, M: mediator, XM: predictor * victimization

In Step 2, only two models had significant predictor and moderator variables, corresponding to general delinquency regressed separately onto cohesion and supervision, and including victimization (models 3 and 4). In both models, cohesion (OR = 0.92, $p<0.0001$) and supervision (OR = 0.80, $p<0.0001$) had a significant protective effect on general delinquency when accounting for history of victimization. In Step 3, only one model (model 3) met the requirements for moderation, with a significant interaction effect for supervision X victimization (OR=0.76, $p<0.001$). Supervision, victimization, and their interactions explained

9.8% of the variance in general delinquency ($p < 0.001$), as compared to 7.9% when the interaction term was left out. This suggests that the relationship between supervision and general delinquency differed according to the youth's history of victimization. We found one significant interaction terms for adaptability X victimization when looking at the school delinquency outcome, but Step 2 did not meet the requirements for moderation. For the remainder of this paper, we will focus on the relationship between supervision and general delinquency as moderated by the youth's history of victimization. Of the 10 moderation pathways that we tested, this pathway was the only one that met all of the requirements for moderation.

Table 5.3. Hierarchical Multiple Regression Analyses for School Delinquency

| | Variables | Step 1: | Step 2: | Step 3: | General R ² | |
|----|-----------------------------------|----------------|----------------|----------------|------------------------|--------|
| | | X → Y | X + M → Y | X + M + XM → Y | Step 2 | Step 3 |
| | Y: school delinquency | OR | OR | OR | | |
| 6 | X: communication | 1.01 | 0.995 | 1.11 | 0.011 | 0.017 |
| | M: victimization | | 1.38** | 1.38** | | |
| | XM: communication * victimization | | | 0.88* | | |
| 7 | X: discipline | 0.99 | 1.02 | 1.11 | 0.011 | 0.013 |
| | M: victimization | | 1.39** | 1.39** | | |
| | XM: discipline * victimization | | | 0.91 | | |
| 8 | X: supervision | 0.90 | 0.91 | 0.86 | 0.014 | 0.015 |
| | M: victimization | | 1.37** | 1.38** | | |
| | XM: supervision * victimization | | | 1.04 | | |
| 9 | X: cohesion | 0.94*** | 0.95*** | 0.95* | 0.027 | 0.027 |
| | M: victimization | | 1.26 | 1.26 | | |
| | XM: cohesion * victimization | | | 1.00 | | |
| 10 | X: adaptability | 1.03 | 1.02 | 1.08** | 0.013 | 0.024 |
| | M: victimization | | 1.35** | 1.37** | | |
| | XM: adaptability * victimization | | | 0.94** | | |

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, X: predictor variable, M: mediator, XM: predictor * victimization

Table 5.4 presents results from the final model where victimization moderated the relationship between supervision and general delinquency, while controlling for caregiver characteristics. Only the relationship of the caregiver to the youth and family structure were significant ($p < 0.001$). This model explains 18.9% of the variance in general delinquency ($p < 0.001$). Youth living with non-parental and non-relative caregivers ($OR = 0.19$, $p < 0.05$), and fathers ($OR = 0.43$, $p < 0.05$) were significantly more likely to engage in general delinquent behaviors compared to those living with biological or adoptive mothers. Additional, youth living in a single-family home versus a two-parent household were two times more likely to engage in delinquent activities ($OR = 1.97$, $p < 0.01$). Experiencing two or more types of abuse versus none increased the odds of committing a delinquent offense seven-fold ($p < 0.001$). Experiencing one type of abuse versus none multiplied the odds of general delinquency by more than 2 ($OR = 2.13$, $p < 0.001$).

Table 5.4. Final Ordered Logistic Regression Model

| General delinquency | | |
|---------------------------------|--------|---------|
| | OR | p-value |
| Supervision | 0.83 | 0.01 |
| Relationship to youth | | |
| Mother | Ref. • | |
| Father | 0.43 | 0.00 |
| Other * | 0.19 | 0.02 |
| Family structure | | |
| Two-parent family | Ref. • | |
| Single-parent family | 1.97 | 0.01 |
| Stepparent family ** | 2.01 | 0.06 |
| Other family *** | 3.55 | 0.09 |
| History of victimization | | |
| No history of abuse | Ref. • | |
| One type of victimization | 2.13 | 0.01 |
| Two or more types of abuse | 6.95 | 0.00 |

Note: * The other category consists of foster parents and non-parental relatives (2 are male and 23 are female). ** The stepparent family consists of one natural/adoptive parent and one stepparent. *** The other family category includes youth who live with non-parental and non-relative caregivers. • Reference group.

Discussion

The current study assessed a model to understand the relationship between parenting and general or school delinquency. This allowed us to examine the potential protective role of parenting among juveniles who sexually offend, while accounting for youth history of victimization. For the moderation analyses, we assessed whether victimization history moderated any of the five parenting practices. We found that history of victimization moderated the relationship between supervision and general delinquency, after adjusting for significant caregiver demographics.

Based on our moderation analysis, experiencing two or more types of abuse (physical, sexual and/or emotional) versus no abuse multiplied the odds of committing general delinquent offenses by seven when controlling for supervision, relationship of caregiver to youth and family structure. This is consistent with other studies that found a strong relationship between total number of types of victimization and total number of endorsed delinquent offenses (Cuevas, Finkelhor, Turner, & Ormrod, 2007; Finkelhor, Ormrod, & Turner, 2007). The relationship between supervision, victimization and delinquency was compounded by family instability. Specifically, we found that youth living in a single-parent household with non-parental or non-relative caregivers increased the likelihood that the youth would engage in general delinquent behaviors and was associated with poor parental supervision.

Limitations

We integrated information from both caregivers and youth to assess history of victimization, but we relied only on parent reports for parenting practices (based on results from chapter 4). Ideally, we would have integrated reports from both informants to

strengthen the validity of our study. Since the ultimate objective of this study is to make recommendations for improved parenting practices, we focus on the caregiver's understanding of his/her parenting practices, rather than relying on the youth's perception of parenting skills. Moreover, differences between youth and caregiver reports are unlikely to indicate that either version is right or wrong, rather, each report is a reflection of the informant's position (Upton, Lawford, & Eiser, 2008).

The precise temporal relationship between victimization and delinquency is often difficult to define (McGrath, Nilsen, & Kerley, 2011; Smith & Thornberry, 1995). Unfortunately, the victimization variables that we used did not provide any information about when the abuse occurred. For this reason, we could not make any assumptions about whether victimization occurred before or after the youth committed delinquent offenses. We tested a model with history of victimization as the moderator of the parenting-delinquency relationship since moderation analyses do not require assumptions to be made about the temporality of events. In future studies, it would be useful to collect information on timing of victimization, thus allowing for a longitudinal understanding of how victimization influences delinquent behaviors.

We acknowledged early on that the interaction between multiple risk factors for youth delinquency is cumulative and complex (Loeber, 1990). Although we examined several risk factors, including parenting practices and history of victimization, it should be noted that many other risk factors may be causally related to juvenile delinquency. Future studies should continue to look at how the combination of school, family, peer, community and individual level variables affect delinquent behaviors. Finally, our results are tempered by the fact that we do not have information on who abused the adolescents. Future studies may

consider collecting information on whether the abuse was perpetrated by caregivers, peers or others.

Conclusion

This research found that history of youth victimization moderated the relationship between supervision and general delinquency. Poor family supervision is associated with increased delinquent activities, and this relationship was exacerbated when the youth a history of victimization. Experiencing two or more types of abuse versus no abuse increased the likelihood of committing general delinquent offenses seven-fold when controlling for supervision, relationship of caregiver to youth and family structure. These findings emphasize the need to target families of youth who have been victimized and examine the correlates between parenting practices and youth maltreatment. Future interventions focusing on reintegrating juveniles who sexually offend into their communities should offer parent-adolescent activities that promote better parent supervision, while considering the youth's history of victimization. It is also important to sensitize and instruct family members and school staff to identify signs of victimization and low parental supervision to support the youth and possibly prevent future delinquency. Help in the form of therapy may also be recommended for youth who have been victimized.

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CHAPTER 6: VARIATIONS IN PARENTING PRACTICES BY PEER ASSOCIATION

Overview

Following Bronfenbrenner's Ecological Systems Theory (Bronfenbrenner, 1979), this study will add peer-level variables to our understanding of juvenile sexual offending. Specifically, this chapter will test whether peer association mediates the relationship between parenting practices and delinquency in a sample of juveniles who sexually offended.

Introduction

A recent study by Caldwell (2010) found that JSO were almost 10 times more likely to recidivate with a non-sexual offense as compared to a sexual offense (Caldwell, 2010). A meta-analysis on recidivism rates for JSO undertaken by McCann and Lussier concluded that the average proportion of non-sexual recidivism was 41.7%, versus 12.2% for sexual recidivism (McCann & Lussier, 2008). This study will consider non-sexual offenses committed by JSO given the large proportion of non-sexual recidivism among JSO.

Importantly, most youthful offenders engage in violent and delinquent behaviors for only a limited time in their lives, desisting as they age into older adolescence and young adulthood. Persistent offenders who continue engaging in delinquent or criminal acts as adults representing a much smaller percentage of the population (Moffitt, 1993). A systematic review of 105 studies found that although there was great variability in criminal trajectories, most studies are largely consistent with Moffitt's idea of "adolescent-limited" and "life-course persistent" offenders (Jennings & Reingle, 2012). For example, a nationally representative, longitudinal study of 27,160 individuals found that the study population was composed of 79.6% non-offenders, 8.1% low-rate offenders, 9.4% adolescent-peaked

offenders (corresponding with adolescent limited), and 2.8% low steady chronic but declining offenders (corresponding with life-course persistent; Cohen, Piquero, & Jennings, 2010).

Many researchers consider deviant peer association to be one of the strongest and most consistent risk factors for juvenile delinquency (Dishion, Patterson, Stoolmiller, & Skinner, 1991; Henry, Tolan, & Gorman-Smith, 2001; Keenan, Loeber, Zhang, Stouthamer-Loeber, & Van Kammen, 1995; Patterson, Dishion, & Yoerger, 2000). Therefore understanding the role of peer association for juvenile offending is important in preventing re-offending behaviors. Drawing upon the socio-ecological approach (Bronfenbrenner, 1979), we will examine the interplay between individual, peer and family influences. We will test if peer association mediates the relationship between parenting practices and delinquency. The following section will briefly review the literature on parenting practices and delinquency.

Peer Association

Deviant Peers and Delinquency

Several longitudinal studies have looked at the relationship between peer influence and delinquency, but the directionality of this relationship has been disputed (Reed & Rose, 1998). Thornberry and colleagues describe a cyclical effect between peer association and delinquency: deviant peers influence delinquent beliefs and behaviors, in turn influencing peer selection (Thornberry et al., 1994). Similarly, Matsueda and Anderson qualify the relationship between delinquent peers and delinquent behavior as dynamic and reciprocal (Matsueda & Anderson, 1998).

Albert and Steinberg propose four distinct pathways that account for the relationship between deviant peer association and adolescent delinquent behaviors (Albert & Steinberg,

2011). The first pathway is based on the social learning theory: adolescents model and reinforce peer behaviors, leading to more risk-taking behaviors (Akers, Krohn, Lanza-Kaduce, & Radosevich, 1979). The second pathway proposed that adolescents who are inclined to engage in delinquent behaviors are more likely to engage with like-minded peers (Jaccard, Blanton, & Dodge, 2005). The third approach acknowledges that adolescents spend more time with peers than with adults, therefore increasing the probability that they will interact with deviant peers (Brown, 2004). Albert and Steinberg propose a fourth approach in which the presence of delinquent peers stimulates a reward-sensitive motivational state, biasing the youth towards risk-taking (Albert & Steinberg, 2011; Gardner & Steinberg, 2005).

Prosocial Peers

Haynie acknowledges the importance of peer delinquency in the etiology of delinquency, but finds that most friendship networks are composed of both prosocial and delinquent peers (Haynie, 2002). Similarly, Elliott and colleagues found that involvement with prosocial peers predicted little or no exposure to delinquency, but they cautioned that association with prosocial peers did not prohibit youth from also associating with deviant peers (Elliott & Menard, 1996). Prosocial peers can have a positive influence on their friends, including promoting beliefs about the importance of helping others, doing well in school, and having supportive relationships (Carlo et al., 1999). Laible and colleagues also found that attachment with prosocial peers was associated with increased self-esteem and empathy (Laible, Carlo, & Roesch, 2004). Bender and Lösel found that association with normative peers, clique membership and social support promoted behavioral continuity, as opposed to antisocial behavior, was associated with delinquency (Bender & Lösel, 1997).

Parenting, Peer Association and Delinquency

Several studies explored the relationships between parenting practices, peer association and juvenile delinquency (Ary, Duncan, Duncan, & Hops, 1999; Bowman, Prelow, & Weaver, 2007; Deutsch, Crockett, Wolff, & Russell, 2012), including one study focusing on JSO (Ronis & Borduin, 2007). A longitudinal study of 246 adolescents from inner-city Chicago assessed the relations between family interactions, peer association and antisocial behavior (Henry et al., 2001). In this study, at 2 years follow-up, adolescents whose parents exhibited low emotional support and inconsistent discipline were more likely to have deviant friends. At 5 years follow-up, this group was more likely to engage in violent and nonviolent delinquent behaviors. The authors concluded that peer violence partially mediated the parenting-delinquency link (Henry et al., 2001).

Another study found that low parental control influenced delinquent behaviors through its effect on deviant peer affiliation - for both African American and Caucasian youth in the United States (Deutsch et al., 2012). Ary et al. (1999) found that low parental monitoring and association with deviant peers predicted engagement in delinquent activities (Ary et al., 1999). Comparing non-sexually offending youth to JSO Ronis and Borduin (2007) found that poor family and relationships with delinquent peers were related to delinquent behaviors in both groups and more common than among a comparison group of non-offending youth (Ronis & Borduin, 2007). More research on parenting, peer relations and delinquency in JSO samples is warranted, especially given the research suggesting that JSO are more likely to reoffend with a non-sexual offense than with a sexual offense (Caldwell, 2002; Worling & Curwen, 2000; Zimring, 2009).

The current study

Several studies have been published on the role of delinquent peers in mediating the relationship between family factors and delinquency (Bowman et al., 2007; Henry et al., 2001). Bowman and colleagues (2007) focused on maternal monitoring and involvement among a sample of African American adolescents (Bowman et al., 2007), and Henry et al. (2001) looked at family type, peer delinquency/violence, and individual delinquency/violence (Henry et al., 2001). Neither of these studies considered a sample of juveniles who sexually offend who also engaged in non-sexual offenses. Chung and Steinberg (2006) examined relationships between neighborhood characteristics, parenting practices, peer group affiliation and delinquency among serious adolescent offenders, but tested a model in which neighborhood characteristics were indirectly related to delinquency through their associations with parenting behaviors and peer deviance (Chung & Steinberg, 2006). This study will add to the literature by assessing if peer association mediates the relationship between parenting and delinquency in a sample of juveniles who sexually offend.

Methods

Sample

Data for this dissertation comes from a 2004-2006 study entitled: “Effectiveness trial: multisystemic therapy (MST) with juvenile offenders”. Youth who committed a sexual offense were enrolled into the study with a caregiver. Youth (n=127) between the ages of 11 and 18 were randomly assigned to one of two treatment conditions after the youth signed an assent form and their caregiver signed a consent form. The two treatment conditions were: 1) multisystemic therapy (MST) adapted for JSO, or 2) treatment as usual (TAU) for JSO, offered by the juvenile sexual offender unit of the juvenile probation department. A stratified permuted blocks randomization (McEntegart, 2003) was used to prevent chance

imbalance across important study variables. The youth sample was 97.64% (n=124) male and 2.36% (n=3) female. At baseline, the mean age of the youth was 14.63 (SD = 1.73). We use only the baseline cross-sectional data for this paper.

Study Variables

The Parenting Scale: Data on parenting constructs were collected using the Pittsburgh Youth Study (PYS) and assessed youth and caregiver reports separately (Loeber, Stouthamer-Loeber, Van Kammen, & Farrington, 1991). However, we used only caregiver reports based on the results of chapter 4. The parenting scale looked at three main constructs: lack of supervision, lax discipline, and poor communication about the youth's activities. There is no time frame for the items in this scale. All of these items use a Likert scale, with higher values for the communication and supervision scales suggesting better outcomes and suggesting poorer outcomes for the lax discipline scale. For ease of interpretation, lax discipline was reverse coded so that higher scores meant better discipline. The scales for communication, supervision and discipline demonstrated good reliability and construct validity in the Pittsburgh youth study (Loeber & Farrington, 1998; Loeber et al., 2001).

Family Adaptability and Cohesion Scales – III: FACES-III evaluates family adaptability and cohesion from the youth and caregiver perspective (Olson, Portner, & Lavee, 1985). We used only caregiver reports based on the results of chapter 4. There is no time frame for the items in this scale. All items are assessed on a Likert scale, with responses ranging from 1 (almost never) to 5 (almost always). Cohesion is calculated as the sum of odd items, with higher scores suggesting that the family is more enmeshed. Adaptability is calculated as the sum of even items, with higher scores suggesting a more chaotic family life. For ease of

interpretation, we reversed the order of values for adaptability so that higher scores on both constructs reflect better family adaptability and cohesion. FACES-III has been used in studies with general delinquency and violent offenders, and has shown good internal consistency and test-retest reliabilities (Blaske, Borduin, Henggeler, & Mann, 1989; Henggeler, Burr-Harris, Borduin, & McCallum, 1991; Rodick, Henggeler, & Hanson, 1986).

Self-reported Delinquency Scale (SRD): We used the Self-Report Delinquency Scale (SRD) to assess the number of delinquent events in the past 90 days (Elliott, Ageton, Huizinga, Knowles, & Canter, 1983). The present study focused on two subscales of the SRD: the 35-item general delinquency subscale includes an array of criminal and delinquent activities, and the 8-item school delinquency subscale assessed school-related delinquent behaviors (e.g. cheating on school tests, truancy). We modeled general delinquency (0, 1-6, more than 6) and school delinquency (0, 1-3, more than 3) as categorical variables. Cut-offs were selected based on the mean number of general and school offenses, which were 6.17 and 3.35 respectively. The SRD is considered one of the best-validated instruments to assess self-reported delinquency (Thornberry & Krohn, 2000), with a mean coefficient alpha of 0.67 in the same sample of JSO as used in this study (Letourneau et al., 2009).

Peer Scale: We used two well-validated, youth-reported scales from the Pittsburgh Youth Study to assess peer delinquency and prosocial activities (Loeber et al., 1991). The PYS Peer Delinquency Scale assessed the frequency of peer engagement in delinquent behaviors in the past 90 days, and the PYS prosocial activities of peers scale assessed peers involvement in pro-social activities in the past 90 days (e.g. church/community/school athletics involvement). All items were rated using a Likert scale, with answers ranging from 0 “none of them” to 4 “all of them”. Items for each scale were summed, with higher scores suggested that a larger proportion of the youth’s friends were engaging in either delinquent

or prosocial activities. The peer delinquency and peer prosocial activities scales demonstrated adequate reliability, with internal consistencies (Cronbach's alpha) ranging from 0.67 to 0.89 assessed at three time points (Henggeler et al., 2009). The peer delinquency variable was positively skewed so we used a log-transformation to improve model specification. The prosocial peer scale was normally distributed.

Missing Data

Looking at patterns of missing data, we found missingness for communication, supervision, peer delinquency and peer prosocial activities. No data were missing for the SRD scale. We adjusted for missing data by using the full-information maximum likelihood (FIML) estimation. FIML is considered an appropriate model for handling data that is assumed missing at random (Schafer & Graham, 2002). We explain below how we handled missingness for each scale.

The Parenting Scale: Based on descriptive statistics of parenting practices, five caregivers had one item missing for their report of supervision, and one answer was scored “don't know” for the PYS caregiver report of communication. Since answers of “don't know” yielded no useful information about parenting strategies, we recoded these answers as missing. These data were assumed to be missing at random (MAR), in other words, patterns of missingness were considered random after adjusting for observed covariates (Rubin, 1976). For MAR data, we performed a simple imputation using the average of available data for each individual. If more than 50% of the items for a particular construct were left unanswered, we left the data as missing, and did not impute. This resulted in us dropping (because the data were missing) one caregiver report for supervision.

Peer scale: As described above, we recoded answers of “don't know” as missing because these provided no useful information about our study variables. Only two items

were recoded as missing for the prosocial peer scale. Five study participants did not complete the peer delinquency and peer prosocial activities scales, and we had to drop them from our analyses. For the peer prosocial activity scale, one individual left 3 answers out of 7 blank, and another left one item blank. These data were assumed to be missing at random (MAR) because patterns of missingness were considered random after adjusting for observed covariates (Rubin, 1976). For MAR data, we performed a simple imputation using the average of available data for each individual. If more than 50% of the items for a particular construct were left unanswered, we left the data as missing, and did not impute. Since five individuals did not answer any of the questions related to peer antisocial behavior, we had to drop them from the analyses. Of these five participants, three did not answer any questions from either the prosocial peer scale or the peer delinquency scale.

Analyses

All data were analyzed using Stata version 12.0 (StataCorp, 2011). We conducted descriptive analyses to assess the distribution and normality of outcome variables and to graph relationships between variables.

Aim 3.1: We assessed whether peer association mediated the relationship between parenting practices and general delinquency at baseline. Parenting practices (communication, discipline, supervision, family cohesion and adaptability) and peer association (prosocial peers and delinquent peers) were modeled as continuous variables. We followed the procedures outlined by Baron and Kenny to test for mediation (Baron & Kenny, 1986). Mediation is said to exist if: 1) the predictor is significantly associated with the outcome in the absence of the mediator, 2) the predictor variable is significantly associated with the mediator, 3) the mediator is associated with the outcome, and 4) the mediator attenuates the strength of the relationship between the independent and dependent variables (Baron &

Kenny, 1986). The Sobel test is considered the gold standard for assessing the strength of the mediation and to test for statistical significance of a mediation pathway (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Sobel, 1982). We performed bootstrapping with case resampling to obtain an accurate estimate of the standard error of the indirect effect (MacKinnon et al., 2002). We then adjusted for caregiver characteristics based on the results from Chapter 4 to see if mediation still holds.

Results

Sample characteristics: Approximately 64% (n=67) of the 127 juveniles enrolled in this study reported committing some delinquent offense (n=67) and 53% reported committing a school-related offense. The mean sum for prosocial peers was 23.53 (SD=6.34) and the mean score for delinquent peers was 5.71 (SD=6.86). Since there were a total of 8 items for the prosocial peers scales and 15 items for the delinquent peers scales, the average response for each item was 2.94 for prosocial peers (23.53 divided by 8) and 0.38 for delinquent peers (5.71 divided by 15). If we go back to the original scoring of the items, an average of 2.94 suggests that participants report that most of their friends engage in prosocial activities. Similarly, an average of 0.38 suggests that participants report that between none and few of their friends engage in delinquent behaviors. More information is summarized in **Table 6.1**.

Table 6.1. Delinquency and Peer Association

| YOUTH CHARACTERISTICS | | |
|---------------------------------------|---------------------|-----------|
| | N | % |
| Delinquency (n=127) | | |
| School delinquency | | |
| No school offense | 60 | 47.24 |
| 1 to 3 school offenses | 39 | 30.71 |
| More than 3 school offenses | 28 | 22.05 |
| General delinquency | | |
| No delinquent offense | 46 | 36.22 |
| 1 to 6 delinquent offenses | 48 | 37.8 |
| 7 or more delinquent offenses | 33 | 25.98 |
| | Mean [range] | SD |
| Peer association | | |
| Prosocial peers scale (n=120) | 23.53 [11-40] | 6.34 |
| Delinquent peers scale (n=122) | 5.71 [0-39] | 6.86 |

Aim 3.1: Peer association as mediator of cohesion-delinquency relationship

Using the available cross-sectional data, we assessed the unidirectional relationship from parenting practices to delinquency. Based on the results of ordered logistic regressions, only family cohesion is significantly related to both general and school delinquency (see **Table 6.2**) when controlling for all other parenting practices (communication, discipline, supervision and adaptability). For every unit increase in cohesion, the odds of committing general or school offenses are decreased by 7% and 6% respectively. These results are in the expected direction, with better family cohesion associated with lower levels of juvenile offending. The odds ratio for communication, discipline and adaptability are approximately 1.00, meaning that delinquent offenses are not related to the level of these parenting practices.

Table 6.2. Ordered Logistic Regression Analyses

| | General delinquency | | | School delinquency | | |
|----------------------|---------------------|-------|-------------|--------------------|------|-------------|
| | OR | SE | p-value | OR | SE | p-value |
| Communication | 0.99 | 0.09 | 0.94 | 1.05 | 0.09 | 0.58 |
| Discipline | 0.97 | 0.110 | 0.77 | 1.00 | 0.12 | 0.99 |
| Supervision | 0.94 | 0.11 | 0.58 | 0.99 | 0.12 | 0.90 |
| Cohesion | 0.93 | 0.03 | 0.01 | 0.94 | 0.03 | 0.04 |
| Adaptability | 1.02 | 0.310 | 0.49 | 1.02 | 0.03 | 0.59 |

We can only test for mediation when the independent variable significantly predicts the outcome (Baron & Kenny, 1986). Since family cohesion was the only parenting practice found to be significantly related to general and school delinquency, we focused on pathways from family cohesion to general and school delinquency, while considering peer association with delinquent versus prosocial peers as potential mediators of this relationship.

To meet the requirements for mediation, steps 1 through 4 need to be significant. These steps correspond to the criterion for mediation outlined by Kenny and Baron (Baron & Kenny, 1986). All information pertaining to 2.3 is included in **Table 6.6**. Only one variable (delinquent peers) meet all four criteria for mediation of the cohesion to general delinquency relationship (corresponding to models 2). For every unit increase in cohesion, the odds of committing general delinquency offenses decreased by 6.6% when controlling for delinquent peers. Similarly, having a greater proportion of friends who are delinquent increased the risk of committing a general delinquent offense by 15.7% when controlling for family cohesion. For this proposed pathway, we conducted the Sobel-Goodman test to assess the strength of the mediation. Based on the Sobel-Goodman test, the mediation effect of deviant peers was statistically significant with 27.4% of the total effect of cohesion on general delinquency being mediated. For model 2, we ran a final ordered logistic regression

model controlling for variables that were significantly related to family cohesion in chapter 4, namely family structure and caregiver education.

Table 6.3. Regression Analyses Testing Mediation Effects

| Variables | | Step 1 X → Y | Step 2 X → M | Step 3 M → Y | Step 4 X → Y, M included | Percent Mediated |
|-----------|------------------------|-----------------|-----------------|-----------------|-----------------------------|---------------------|
| | | OR | β | OR | OR | % |
| 1 | X: cohesion | 0.92 *** | 0.09 | 0.95 | 0.92 ** | |
| | Y: general delinquency | | | | | |
| | M: prosocial peers | | | | | |
| 2 | X: cohesion | 0.92 *** | 0.96 * | 1.17 *** | 0.93 * | 27.37 |
| | Y: general delinquency | | | | | |
| | M: delinquent peers | | | | | |
| 3 | X: cohesion | 0.94 * | 0.09 | 1.00 | 0.95 | |
| | Y: school delinquency | | | | | |
| | M: prosocial peers | | | | | |
| 4 | X: cohesion | 0.94 * | 0.96 * | 1.13 *** | 0.97 | |
| | Y: school delinquency | | | | | |
| | M: delinquent peers | | | | | |

Mediation is supported when steps 1, 2, 3 and 4 are significant, * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$, the Sobel-Goodman test reveals percent of total variance that is mediated

Discussion

We found that delinquent peer association mediated the relationship between family cohesion and general delinquency. Family cohesion emerged as the only parenting practice to have a significant direct effect on both general and school delinquency. Cohesion relates to the connectedness or separation of individuals within a family, and is important to understand emotional bonds between family members (Olson, 2000). Family cohesion facilitates adolescent development through parental attachment and emotional closeness (Laursen & Collins, 1994), and stimulates feelings of loyalty, reciprocity and solidarity indicative of supportive familial relationships (Coohey, 2001; Laursen & Collins, 1994). According to Gorman-Smith, Tolan and Henry, children from families with relatively high levels of discipline, monitoring and structure in family roles, but low levels of cohesion were

most at risk for serious and chronic delinquency (Gorman-Smith, Tolan, & Henry, 2000). Consistent with our study of juveniles who sexually offended, Cashwell and Vacc found that family cohesion was the strongest familial influence on self-reported delinquency among a sample of adolescents with no known delinquent background (Cashwell & Vacc, 1996).

These analyses suggest that deviant peer association mediates the relationship between family cohesion and general delinquency. As expected, we found that having more deviant friends was associated with an increased likelihood of committing delinquent offenses, even in the context of strong family cohesion. Similarly, having more prosocial friends was associated with committing fewer delinquent offenses even in the context of low family cohesion. These findings reiterate the importance of friendship formation during adolescence: as parental influence dissipates, peer influence gains in importance. The literature has consistently found that the delinquency level of close friends is one of the strongest predictors of delinquent behaviors in youth (Elliott, Ageton, Huizinga, Knowles, & Canter, 1983). In the absence of supportive family relationships, peer influence may gain in importance. Although the juvenile may gain a sense of belonging by joining a group of delinquent peers, the youth will be more likely to engage in delinquent behaviors, contributing to long-term negative outcomes.

Limitations

Based on the results from Chapter 4, we decided to rely only on parent reports for parenting practices. Ideally, we would have integrated reports from both informants to strengthen the validity of our study. Since the ultimate objective of this study is to make recommendations for improved parenting practices, we focused on the caregiver's understanding of his/her parenting practices, rather than relying on the youth's perception of parenting skills. Differences between youth and caregiver reports are unlikely to indicate

that either version is right or wrong, rather, each report is a reflection of the informant's position (Upton, Lawford, & Eiser, 2008).

Along the same lines, reports of deviant peer affiliation were based solely on youths' reports. It would have been preferable to interview the peers themselves about their delinquent activities. Additionally, the peer scale provided information about the proportion of friends who engaged in delinquent and prosocial activities. It would have been preferable to have information on the number of friends who the youth considered to be delinquent/prosocial.

We looked at peer association as the mediator of the relationship between parenting and delinquency since the variables of interest were measured concurrently, indicating peer association and delinquent offenses in the past 90 days. Since our data is cross-sectional data, we were unable to prove the sequence of events. Thus, the results of our mediation analysis are only suggestive of a mediation effect. A longitudinal study is required to confirm that delinquent peer association mediates the parent-delinquency relationship.

Conclusion

This research highlights the relationship between family cohesion, delinquent peer association and adolescent delinquent behaviors. We found that family cohesion was indirectly associated with non-sexual delinquency via peer association. Having more deviant friends was associated with an increased likelihood of committing delinquent offenses whereas having more prosocial friends was associated with committing fewer delinquent offenses. The results from our study suggest that it may not be enough to improve family cohesion. In the absence of a cohesive home environment, the youth will be more likely to establish strong connections with peers. In turn, the type of peer that the youth befriends (prosocial versus delinquent) has a direct impact on the likelihood of committing a non-

sexual offense. In order to thwart the negative impact of delinquent peers, it is important to promote prosocial peer relationships. One way to do this is to provide caregivers with tools to help reduce their children's contact with delinquent peers, while promoting more contact with prosocial peers.

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CHAPTER 7: RELATIONSHIP BETWEEN PARENTING PRACTICES, PEER ASSOCIATION AND ACADEMIC PERFORMANCE OF JSO

Overview

This study will investigate individual, family and peer-level factors related to academic performance in a sample of juveniles who have sexually offended (JSO). This chapter builds upon our previous work by adding the school context to our understanding of sexual offending among youth. Extant literature on the school context of juvenile sex offending is sparse. To add to this literature, we will explore, among a sample of JSO, if the youth's academic performance differ by primary caregivers' demographic characteristics (age, gender, race/ethnicity, family structure, level of education, poverty status and relationship to youth). Building on analyses from chapter 6, we will then assess if the relationship between five parenting practices (communication, discipline, supervision, family adaptability and cohesion) and academic performance varies as a function of peer association (delinquent peers/ prosocial peers). Finally, we will adjust for relevant caregiver characteristics to determine if they are significantly related to youth academic performance.

Introduction

During adolescence, for most youth, the two most salient developmental contexts are the home and the school environments (Adams, 1995), and the primary socializing agents are parents and peers (Parke & Buriel, 1998). According to Steinberg and Silk (2002), the interface between school and home life gains critical importance during adolescence (Steinberg & Silk, 2002). Adolescence is characterized by emotional detachment from parents, with more time spent alone or with peers as opposed to with parents (Larson & Richards, 1991). During this period, youth demonstrate increased behavioral independence and tend to disclose less intimate information to parents (Larson & Richards, 1991), while

peer relationships are solidified and become more intimate (Lansford, Criss, Pettit, Dodge, & Bates, 2003). Adolescents explore their connections and relationships to family, friends and to the broader society, often resulting in changes in family relationships (Kreppner, 1992).

This study explores how the interaction of family and peer-level factors can contribute to both positive and negative youth outcomes. According to Patterson and Dishion (1991), poor parenting practices can increase antisocial behaviors and impair youth's development of social and academic skills. In turn, inadequate social skills and poor academic performance can place the youth at risk for rejection by prosocial peers. Poor parenting practices during adolescence can reinforce deviant peer association and increase the likelihood that the youth will engage in delinquent behaviors, thus perpetuating the cycle leading to school failure (Patterson & Dishion, 1985). Similarly, Simons and colleagues argue that inept parenting practices are precursors to school failure, association with deviant peers and delinquent behaviors (Simons, Whitbeck, Conger, & Conger, 1991). At the same time, having parents who exert good supervision and are positively involved in the youth's activities can protect the youth against negative outcomes, including delinquency (Furstenberg, 1999; Gorman-Smith, Tolan, & Henry, 2000). DeVore and colleagues found that parental monitoring during adolescence has a protective effect on youth risk behaviors and was associated with a decline in deviant peer association over time (DeVore & Ginsburg, 2005).

The present research considers the separate influence of parenting practices and peer relationships on academic performance in a sample of adolescents who sexually offended. This study adds to the literature by looking at the separate effect of five parenting practices: communication, supervision, discipline, family cohesion and adaptability, on peer association and academic performance. To our knowledge, only one study has looked at the family, peer

and school contexts of juvenile sexual offending (Ronis & Borduin, 2007). Ronis and Borduin compared five groups of offenders on measures of individual adjustment, family relations, peer relations and academic performance to understand whether JSO had unique problems compared to other offenders. In light of the above, the specific objectives of this study are: 1) determine if academic performance differs by caregiver's age, gender, race/ethnicity, family structure, level of education, poverty status and relationship to the youth, 2) to determine how the relationship of five parenting characteristics to youth academic performance varies by youth delinquent peer association, and 3) to determine how the relationship of parenting practices to youth academic performance varies by youth prosocial peer association.

The Academic Performance of Delinquent Youth

Juvenile delinquency is often coupled with poor academic performance (Loeber & Dishion, 1983; Maguin & Loeber, 1996; Walker & Sprague, 1999). In a study of 157 youth who had contact with the juvenile justice system and then returned to the custody of their caregivers, Brown et al found that 62.4% of youth (ages 12-17) had problems in school functioning or academic performance, with below average standard achievement scores (Brown, Riley, Walrath, Leaf, & Valdez, 2008). Importantly, most non-incarcerated delinquent youth remain in their community and school despite the academic problems they face (Balfanz, Spiridakis, Neild, & Legters, 2003). Similarly, incarcerated youth experience disproportionate academic challenges as compared to their non-delinquent peers (Quinn, Rutherford, & Leone, 2001; Quinn, Rutherford, Leone, Osher, & Poirier, 2005; Rutherford, Bullis, Anderson, & Griller-Clark, 2002; Wang, Blomberg, & Li, 2005). Academic problems are exacerbated during the period of the youth's incarceration (Chung, Little, & Steinberg, 2007): Foley reports that the academic achievement of incarcerated youth is one to several

years below expected grade levels (Foley, 2001). Thus, when incarcerated youth complete their time in detention centers and are re-introduced into the school system, they are at a clear disadvantage academically as compared to their non-delinquent peers (Mathur & Schoenfeld, 2010). Additionally, since many of the delinquents come from inner-city schools that are limited in resources, many schools are unable to offer additional services to youth in need (Altschuler & Brash, 2004).

Family Characteristics and Academic Achievement

Caregiver Demographics and Academic Achievement

Family demographic characteristics can influence adolescent academic achievement directly, or indirectly by exposing youths to high-risk neighborhoods or by affecting parenting practices (Eamon, 2005). Children from single-parent families receive less help with homework than their counterparts who live in a two-parent household. In turn poor parental involvement with the youth's schooling is associated with negative academic outcomes (Astone & McLanahan, 1991). Using a national database, Lee, Kushner and Cho found that parent and child gender interacted with parent involvement to influence academic achievement: daughters who lived with highly motivated single fathers performed better academically than did other groups (Lee, Kushner, & Cho, 2007). There is also an established relationship between adverse effects of economic hardships and adolescent academic achievement. A meta-analysis based on a sample of more than 100,000 students found that there was a moderate to high relationship between socioeconomic status and academic achievement (Sirin, 2005). However other research suggests that positive parenting practices can influence the effects of socioeconomic status and race/ethnicity on academic achievement (Desimone, 1999; Lareau & Weininger, 2003). Based on these studies, we will

control for a variety of socio-demographic characteristics that may affect the relationship between family characteristics and academic outcomes.

Parenting Practices and Academic Achievement

Parental practices and parental school involvement are positively associated with better study habits, improved attitudes toward school and lower absenteeism and dropping-out (Greenman, Bodovski, & Reed, 2011; Lareau & Weininger, 2003; Muller, 1995). A review of the empirical research on the relationship between parenting practices, parenting styles and adolescent school achievement suggests that parental involvement and monitoring are the most robust predictors of academic success (Spera, 2005). This same review found that authoritative parenting is often associated with higher levels of academic achievement, but there is variability based on race, ethnicity and socioeconomic status. For example, a longitudinal study examined the relationship between school performance and parental behaviors to examine whether authoritative parenting, parental involvement, and parental encouragement lead to school improvements (Steinberg, Lamborn, Dornbusch, & Darling, 1992). The researchers found that high school students who describe their parents as authoritative reported better school performance and engagement compared with peers from non-authoritative homes. This study will assess the separate effect of five parenting practices on a variety of measures of academic success. Although this literature calls for us to look at the relationship between parental school involvement and academic outcomes, this information is not available in our dataset.

Parenting, Peer Association and Academic Achievement

Parenting, Delinquent Peers and Academic Achievement

The literature highlights the potential for delinquent peer association to compound the relationship between poor parenting and academic failure during early adolescence

(Dishion, Patterson, Stoolmiller, & Skinner, 1991). Data from a sample of high school students indicate that positive parenting practices (monitoring, encouragement and joint decision-making) were related to both academic achievement and peer group affiliation (Brown, Mounts, Lamborn, & Steinberg, 1993). Fitzgerald found that low parental monitoring was associated with increased youth delinquency, and this relationship was magnified when the youth reported associating with delinquent peers (Fitzgerald, 2010). Another study found that academic problems and rejection by conventional peers was associated with deviant peer association (Simons et al., 1991). Simons et al. argued that problems at school had an indirect effect on delinquency through association with deviant peers. Specifically, exposure to peer fighting was strongly associated with subsequent violence, whereas exposure to academically oriented peers decreased the likelihood of violent behavior (Haynie, Silver, & Teasdale, 2006). The proposed study will assess if the relationship between caregivers and youth is associated with the likelihood of youth associating with delinquent peers.

Parenting, Prosocial Peers and Academic Achievement

Wentzel investigated adolescents' supportive relationships with parents, teachers and peers in relation to school motivation (Wentzel, 1998). She found that peer support positively predicted prosocial goals and parent support positively predicted increased interest in school and goal orientations. Additionally, she found that family cohesion was related to GPA through the relationship with the student's interest in school (1998). Another study by Wentzel and Caldwell (1997) explored the longitudinal relationship of reciprocated friendships, peer acceptance, group membership and academic achievement in middle school. Positive peer relationships were associated with better academic performance due to their association with prosocial behaviors (Wentzel & Caldwell, 1997). A study by Brown and

colleagues found that parental emphasis on achievement was significantly associated with better academic performance (grade average), which in turn was significantly associated with the “brain crowd”, a term used to describe the youth’s peer group affiliation based on reputation among peers (Brown et al., 1993). As suggested by these studies, we will investigate whether positive parenting practices are related to better academic performance through their association with prosocial peers.

The Current Study

This study is based on the premise that association with delinquent peers will further exacerbate the effect of poor parenting on academic achievement. Conversely, we believe that association with prosocial peers will further reinforce positive parenting, leading to better academic performance. We will identify parenting and peer-level factors related to the academic performance of delinquent youth. The specific objectives of this study are: 1) determine if academic performance differs by caregiver’s age, gender, race/ethnicity, family structure, level of education, poverty status and relationship to the youth, 2) to determine how the relationship of parenting to academic performance varies by delinquent peer association, and 3) to determine how the relationship of parenting to academic performance varies by prosocial peer association. The findings from this chapter will allow us to understand how particular parenting practices interact with peer association in association with youth academic performance.

Methods

This section offers an overview of the sample, instruments, missingness and analytical techniques that we have used. Please refer to chapter 3 for more information about the trial research design, inclusion/exclusion criteria, recruitment procedure, instruments, missingness, power analysis and statistical methods.

Sample

Data for this dissertation comes from a 2004-2006 study entitled: “Effectiveness trial: multisystemic therapy (MST) with juvenile offenders”. Youth who committed a sexual offense were enrolled into the study with a caregiver. Youth (n=127) between the ages of 11 and 18 were randomly assigned to one of two treatment conditions after the youth signed an assent form and their caregiver signed a consent form. The two treatment conditions were: 1) multisystemic therapy (MST) adapted for JSO, or 2) treatment as usual (TAU) for JSO, offered by the juvenile sexual offender unit of the juvenile probation department. A stratified permuted blocks randomization was used to prevent chance imbalance across important study variables (McEntegart, 2003). The youth sample was 97.64% (n=124) male and 2.36% (n=3) female. At baseline, the mean age of the youth was 14.63 (SD = 1.73). We use only the baseline cross-sectional data for this paper.

Study Variables

The Parenting Scales: Data on parenting constructs were collected using the Pittsburgh Youth Study (PYS) and assessed youth and caregiver reports separately (Loeber, Stouthamer-Loeber, Van Kammen, & Farrington, 1991). However, we used only caregiver reports based on the results presented in chapter 4. The parenting scale examined three main constructs: lack of supervision, discipline, and communication about the youth’s activities. All of these items use a Likert scale, with higher values for the communication and supervision scales suggesting better outcomes and suggesting poorer outcomes for the lax discipline scale. For ease of interpretation, lax discipline was reverse coded so that higher scores meant better discipline. We summed the items for each parenting construct separately and then divided the constructs of supervision, discipline and communication into lowest, middle and highest tertiles. This allowed us to assess if participants tended to report high,

medium or low scores across these parenting practices. The scales for communication, supervision and discipline demonstrated good reliability and construct validity in the Pittsburg youth study (Loeber & Farrington, 1998; Loeber et al., 2001).

Family Adaptability and Cohesion Scales – III: FACES-III evaluates family adaptability and cohesion from the youth and caregiver perspective (Olson, Portner, & Lavee, 1985). We used only caregiver reports based on the results of chapter 4. All items are assessed on a Likert scale, with responses ranging from 1 (almost never) to 5 (almost always). Cohesion is calculated as the sum of odd items, with higher scores suggesting that the family is more enmeshed. Adaptability is calculated as the sum of even items, with higher scores suggesting a more chaotic family life. For ease of interpretation, we reversed the order of values for adaptability so that higher scores on both constructs reflect better family adaptability and cohesion. We summed the items for family adaptability and cohesion separately, and then divided the constructs into lowest, middle and highest tertiles. This allowed us to assess if participants tended to report high, medium or low scores across these parenting practices as was done in a study by Franko and colleagues (Franko, Thompson, Bauserman, Affenito & Striegel-Moore, 2008). FACES-III has been used in studies with general delinquency and violent offenders, and has shown good internal consistency and test-retest reliabilities (Amato, 2005; Blaske, Borduin, Henggeler, & Mann, 1989; Henggeler, Burr-Harris, Borduin, & McCallum, 1991; Rodick, Henggeler, & Hanson, 1986).

Child Behavior Checklist: The present study focuses on the subscale of the CBCL pertinent to education. To assess the youth's academic performance, we summed the items relating to performance on the four core academic subjects (reading, English or language arts/ history or social studies/ arithmetic or math/ science) compared with other students in the classroom. All items are assessed on a Likert scale, with responses ranging from 1

(failing) to 4 (above average). We modeled the sum score as continuous for all of our regression analyses, with higher scores suggesting better academic performance. When we wanted to provide an interpretation of academic performance based on the original scoring system, we used the average grade reported by dividing the sum score of academic performance by the number of items in the scale. Looking at the average grade versus the sum score for academic performance facilitated interpretation as we were then be able to refer to the original scoring system for academic performance, based on the Likert scale described above. We use only caregiver reports because there was less missing data for caregiver reports ($n = 4$ for caregiver reports versus $n = 9$ for youth reports). The Child Behavior Checklist (Achenbach, 1995) has been well validated and is considered one of the best instruments for assessing youth mental health functioning (Rescorla & Achenbach, 2004).

Peer Scale: We used two well-validated youth-reported scales from the Pittsburgh Youth Study to assess peer delinquency and prosocial activities (Loeber et al., 1991). The 15-item peer delinquency scale assessed the frequency of peer engagement in delinquent behaviors in the past 90 days while the 8-item prosocial activities of peers scale assessed peer's involvement in pro-social activities in the past 90 days (e.g. church/community/school athletics involvement). All items were rated using a Likert scale, with answers ranging from 0 "none of them [my friends]" to 4 "all of them [my friends]". We created an average score for both scales by summing up the items for each construct, and then dividing by 15 and 8 respectively to derive an average proportion of friends who engaged in delinquent and prosocial activities. Both scales demonstrated adequate reliability, with internal consistencies (Cronbach's alpha) ranging from 0.67 to 0.89 assessed at three time-points (Henggeler et al., 2009).

Missing Data

We found missingness for communication, supervision, peer delinquency and peer prosocial activities and youth academic outcomes. We adjusted for missing data by using the full-information maximum likelihood (FIML) estimation. FIML is considered an appropriate model for handling data that is assumed missing at random (Schafer & Graham, 2002). We explain below how we handled missingness for each scale.

The Parenting Scale: Based on descriptive statistics of parenting practices, five caregivers had one item missing for their report of supervision, and one answer was scored “don’t know” for the PYS caregiver report of communication. Since answers of “don’t know” yielded no useful information about parenting strategies, we recoded these answers as missing. These data were assumed to be missing at random (MAR), in other words, patterns of missingness were considered random after adjusting for observed covariates (Rubin, 1976). For MAR data, we performed a simple imputation using the average of available data for each individual. If more than 50% of the items for a particular construct were left unanswered, we left the data as missing and did not impute. This resulted in us dropping (because the data were missing) one youth report for supervision.

Child Behavior Checklist: We found more than twice as much missing data for the youth reports of academic performance as compared to caregiver reports. Four caregivers (3.2%) failed to answer all four questions about the youth’s academic performance and nine adolescents (7.1%) failed to report all four questions about their academic performance. No imputation was possible for either youth or caregiver reports because 100% of the items regarding grades in core academic subjects were missing, and therefore we had to drop these individuals from the analysis.

Peer scale: As described above, we recoded answers of “don’t know” as missing because these provided no useful information about our study variables. Only two items were recoded as missing for the prosocial peer scale. Five study participants did not complete the peer delinquency and peer prosocial activities scales, and we had to drop them from our analysis. For the peer prosocial activity scale, one individual left three answers out of seven blank and another left one item blank. These data were assumed to be missing at random (MAR) because patterns of missingness were considered random after adjusting for observed covariates (Rubin, 1976). For MAR data, we performed a simple imputation using the average of available data for each individual. If more than 50% of the items for a particular construct were left unanswered, we left the data as missing and did not impute. Since five individuals did not answer any of the questions related to peer antisocial behavior, we had to drop them from the analysis.

Analyses

Aim 4.1: We modeled our dependent variable (grades in core academic subjects) as continuous and our independent variables (caregiver demographic characteristics) as categorical. We assessed pairwise correlations to examine the extent of collinearity among all predictors. Two predictor variables were considered highly collinear if their correlation was greater than 0.8 (Mason & Perreault Jr, 1991). Stepwise linear regression models were independently fit for our dependent variable (grades in core academic subjects), including all caregiver characteristics one-by-one (forward selection method) to demonstrate the relative contribution of each of these variables to the outcome variable. Thus, caregiver age, gender, race/ethnicity, family structure, level of education, poverty status and the relationship of the caregiver to the youth were entered one-by-one into the simple linear regression models. After running the univariate linear regression models, we included statistically significant

predictor variables into the multivariate regression models. Only variables that had a p-value ≤ 0.05 were included in the final multiple linear regression model. We considered using the Bonferroni correction to counteract the problem of multiple comparisons. However, since Bonferroni tests each individual hypothesis at a significance level of $1/n$ (with n being the number of independent variables in the model), we decided that using Bonferroni would be too conservative (Perneger, 1998). Following the multivariate regressions, we ran post-hoc comparisons to identify which pairs of the factor levels were significantly different from each other. In subsequent aims, we will control for significant caregiver demographic characteristics. The amount of variance of the dependent variable explained by the predictor variables at each step of the hierarchical regression models will be assessed by R^2 . The R^2 statistic is used to assess goodness-of-fit for a linear model: the higher the R^2 , the better the model fits the data.

Aim 4.2 and 4.3: We modeled our dependent variable (grades in core academic subjects) as continuous and our independent variables (parenting and peer association) as categorical. We performed descriptive statistics to look at how parenting was related to delinquent and prosocial peer association. We conducted a series of hierarchical multiple linear regressions to assess the main and multiplicative relations of parenting and academic performance with delinquent and prosocial peer association (Aiken & West, 1991). For Step 1, we entered the main effect of parenting on academic performance into the linear regression model. In Step 2, we added peer association with delinquent or prosocial peers to the equation. In Step 3, we built on previous models by adding the interactions terms for parenting by peer association and tested for the significance of the interaction terms. To visualize patterns of interaction, we plotted the relations of parenting and academic

performance to peer association. Finally, in Step 4, we adjusted for significant caregiver demographic factors from aim 4.1.

Results

Aim 4.1: Relative to other students in the classroom, participants had an average grade of 2.88 [range: 1-4; SD: 0.81] across all four core academic subjects. A grade of 3 suggested that youth have average academic performance compared with other students in the class (see original scoring system for CBCL). None of the caregiver or youth characteristics reached a level of collinearity (i.e. > 0.8) suggesting problems with their inclusion. Results from the univariate linear regression models are presented in Table 7.1. This table presents the results of caregiver demographic characteristics regressed onto youth academic performance. Since only relationship of caregiver to youth was significantly associated with youth academic performance, we did not need to run multivariate linear regression models. Based on post-hoc comparisons, being raised by a father (versus a mother) was significantly associated with higher academic performance ($p= 0.017$). Caregiver education (high school degree versus no degree) was marginally related to academic performance ($p=0.06$).

Table 7.1. Results of Linear Regressions [mean (SE)] and Pairwise Comparisons

| Results of linear regression analyses | | | | Pairwise comparisons |
|---------------------------------------|-----------------------|--------------|-------------|------------------------------------|
| | | mean | SE (robust) | |
| Age | | | | |
| 23-37 | | 10.12 | 0.51 | |
| | 38-45 | 10.49 | 0.51 | |
| | 46-73 | 11.22 | 0.51 | |
| Gender | | | | |
| | Male | 11.63 | 0.75 | |
| | Female | 10.42 | 0.32 | |
| Race/ethnicity | | | | |
| | White, non-Hispanic | 10.45 | 0.71 | |
| | Black, non-Hispanic | 10.48 | 0.40 | |
| | Hispanic | 10.97 | 0.57 | |
| Family structure | | | | |
| | Two-parent family | 11.17 | 0.61 | |
| | Single-parent family | 10.13 | 0.44 | |
| | Stepparent family | 10.60 | 0.85 | |
| | Other family | 11.09 | 0.69 | |
| Poverty status | | | | |
| | Below poverty line | 10.61 | 0.44 | |
| | At poverty threshold | 10.55 | 0.74 | |
| | Above poverty line | 10.52 | 0.49 | |
| Education level | | | | |
| | Less than high school | 11.06 | 0.47 | |
| | High school degree | 9.67 | 0.57 | |
| | Some college | 10.83 | 0.51 | |
| Relationship to youth | | | | |
| | Mother (1) | 10.29 | 0.36 | (2) versus (1) ⁺ |
| | Father (2) | 12.33 | 0.76 | |
| | Other (3) | 10.40 | 0.65 | |

Note: The other category consists of foster parents and non-parental relatives (2 are male and 23 are female). The stepparent family consists of one natural/ adoptive parent and one stepparent. The other family category includes youth who live with non-parental and on-relative caregivers. The bolded text corresponds to significant p -values (at $p < 0.05$).

The results from Step 1 (five parenting practices separately regressed onto academic performance) are presented in **Table 7.3**. We assessed the level of each parenting practices as low, middle or high. For **Table 7.3**, academic performance was assessed on a scale from 0 to 16. Relationships were typically in the expected direction with better parenting associated with better academic performance; however, only family cohesion was significantly associated with academic performance ($p<0.05$), with higher cohesion associated with higher academic performance. Parental supervision was marginally associated with academic performance ($p=0.093$). Higher caregiver reports of discipline, supervision and adaptability are non-significantly associated with higher academic performance.

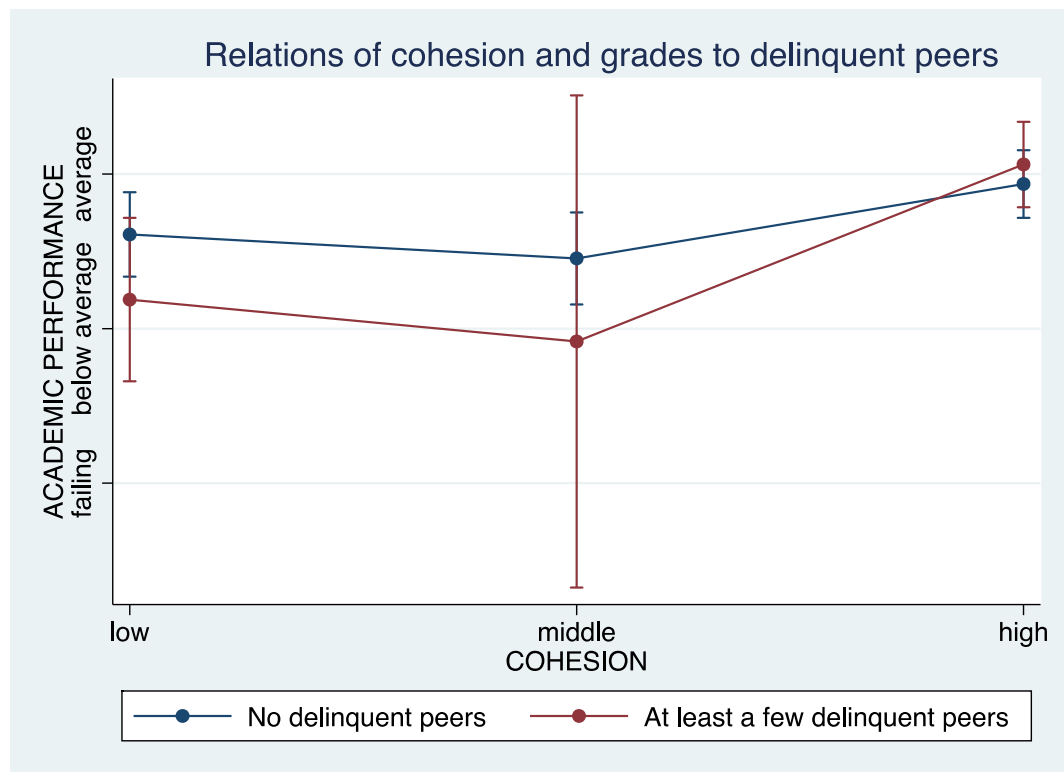
Table 7.2. Hierarchical Regression Models (Parenting Characteristics Regressed Onto Youth Academic Performance)

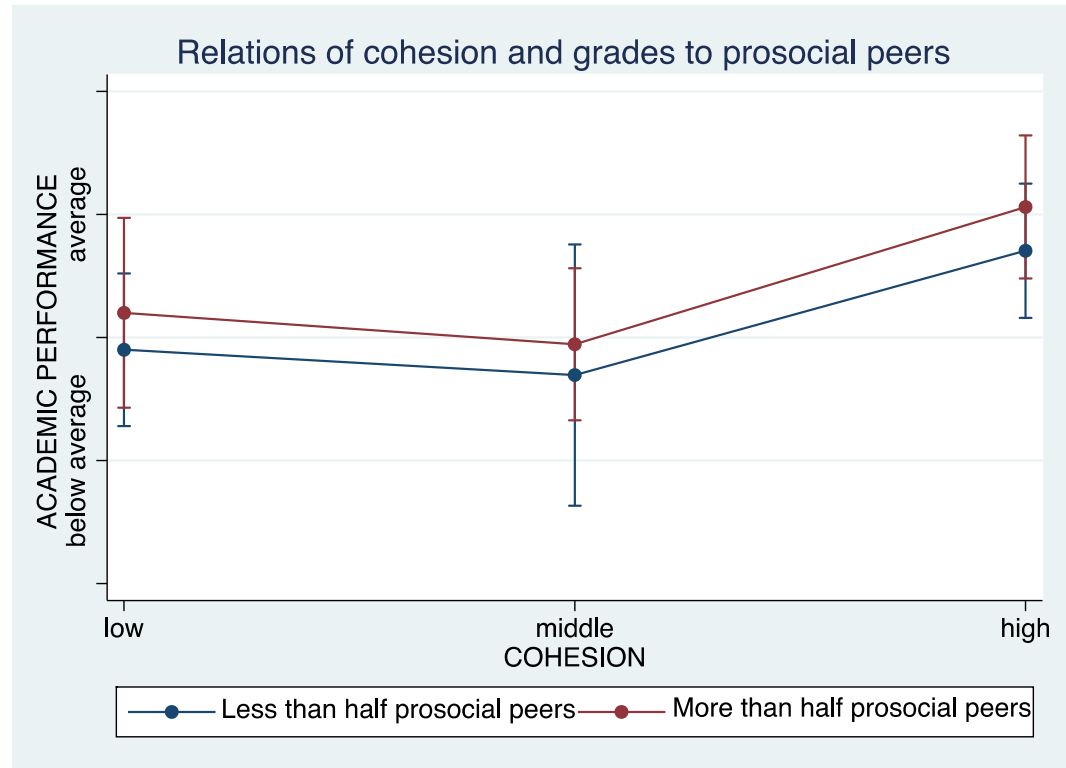
| | n | Mean | SE |
|----------------------|----|---------------|------|
| Communication | | | |
| Low | 30 | 10.36 | 0.62 |
| Middle | 30 | 11.38 | 0.61 |
| High | 67 | 10.38 | 0.40 |
| Discipline | | | |
| Low | 42 | 10.20 | 0.52 |
| Middle | 40 | 10.75 | 0.52 |
| High | 45 | 10.88 | 0.51 |
| Supervision | | | |
| Low | 23 | 9.73 | 0.70 |
| Middle | 36 | 10.26 | 0.55 |
| High | 68 | 11.09 | 0.40 |
| Cohesion | | | |
| Low | 42 | 10.10 | 0.50 |
| Middle | 37 | 9.64 | 0.53 |
| High | 48 | 11.79* | 0.46 |
| Adaptability | | | |
| Low | 38 | 10.73 | 0.54 |
| Middle | 41 | 10.25 | 0.52 |
| High | 48 | 10.83 | 0.49 |

Note: * $p < 0.05$

The following figures (**figure 7.1-7.10**) represent the relations of each of the five parenting practices and academic performance to both delinquent and prosocial peer association. These figures correspond to the graphical representation of Step 3, where parenting, peer association and their interaction are regressed onto academic performance. None of the interaction terms in Step 3 were significant, and therefore we will be presenting trends observed based on the data. **Table 7.4** presents the overall R^2 , F-scores and corresponding p-values for all steps of the hierarchical linear regressions.

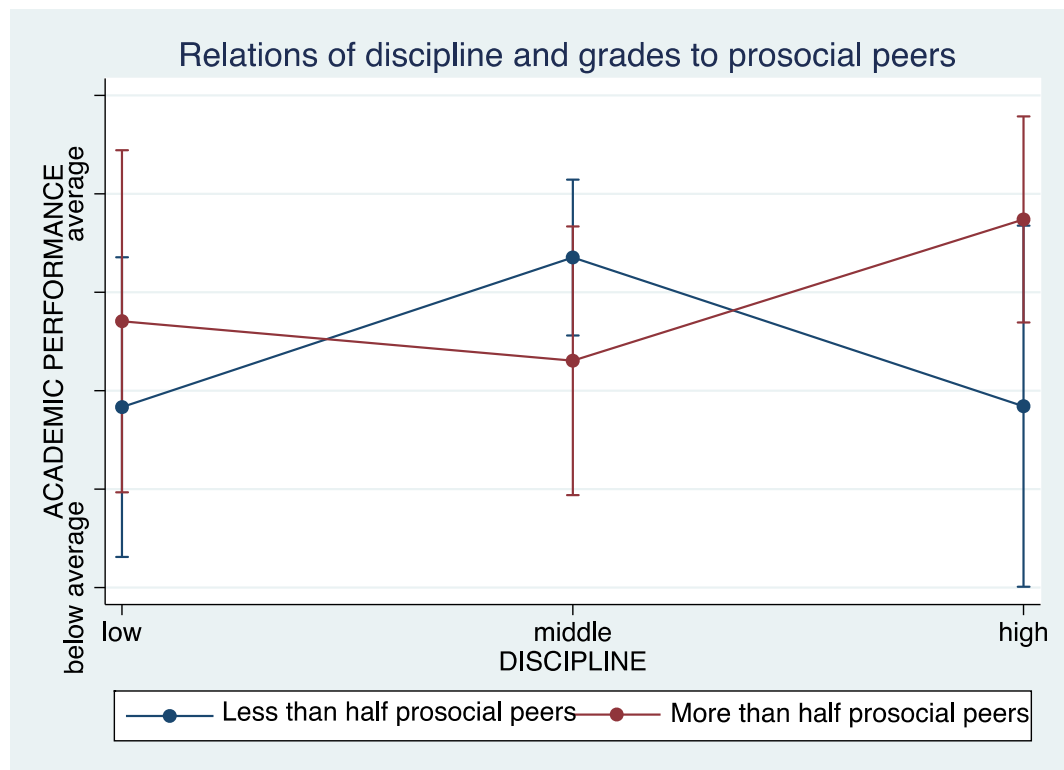
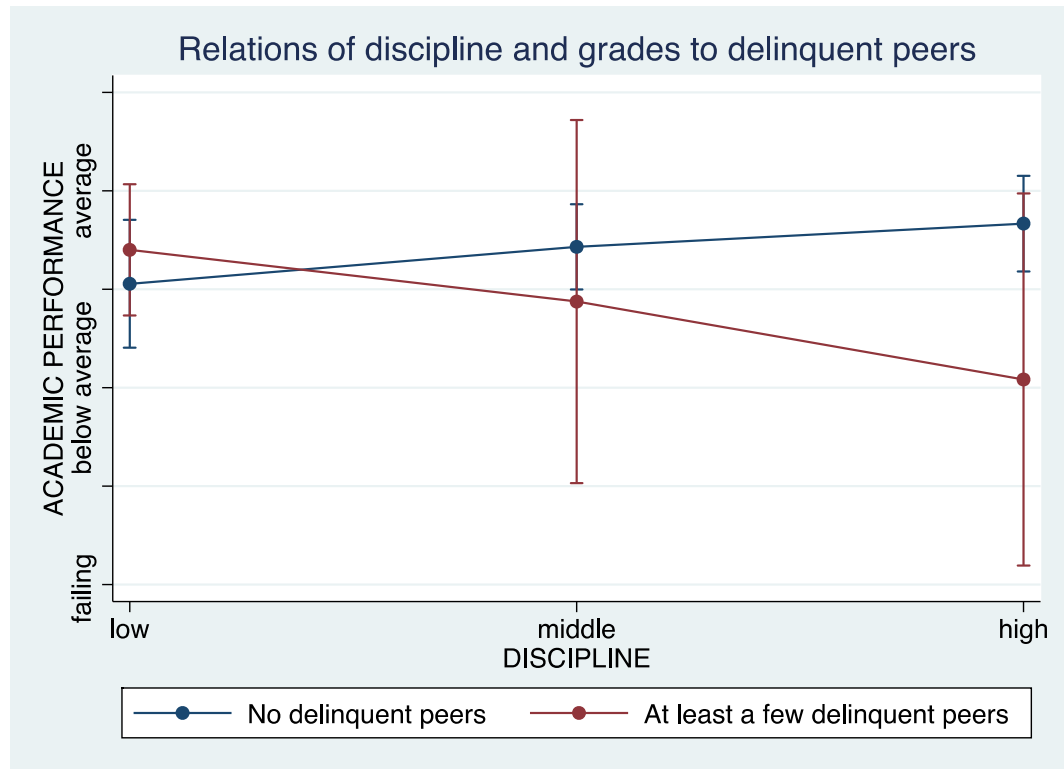
Figures 7.1 and 7.2: Relationship of Cohesion and Academic Performance to Peer Association





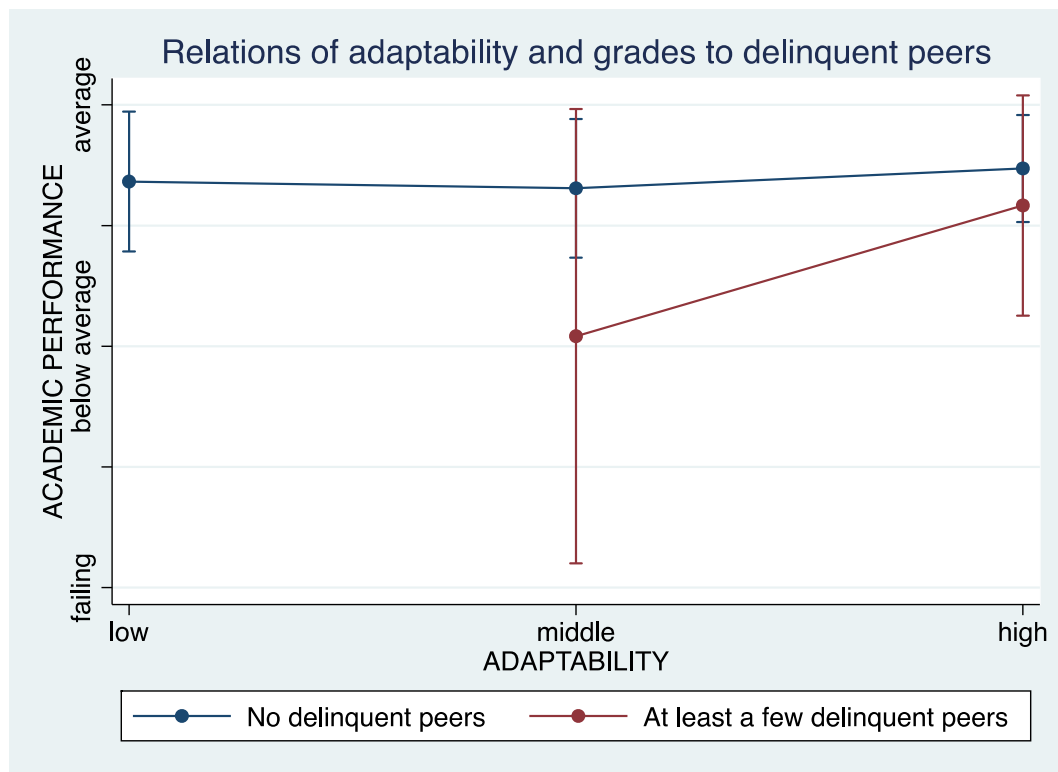
Cohesion: Overall, associating with at least a few delinquent peers is associated with lower academic performance, regardless of the level of family cohesion. Similarly, having more than 50% of friends who are prosocial is associated with higher academic performance, regardless of the level of caregiver-reported cohesion. At Step 3, the model explained 10.7% and 9.2% of the variance in academic performance when looking at delinquent and prosocial peer association, with $F(5,177) = 3.65, p < 0.01$ and $F(5,117) = 2.58, p < 0.05$ respectively. The F-test was significant, suggesting that there was a significant difference in academic performance based on the means of low, middle and high cohesion. Additionally, being reared by a father versus a mother was significantly associated with higher academic performance and resulted in a significant 3.9% and 4.2% increment in academic performance for delinquent and prosocial peers at Step 4.

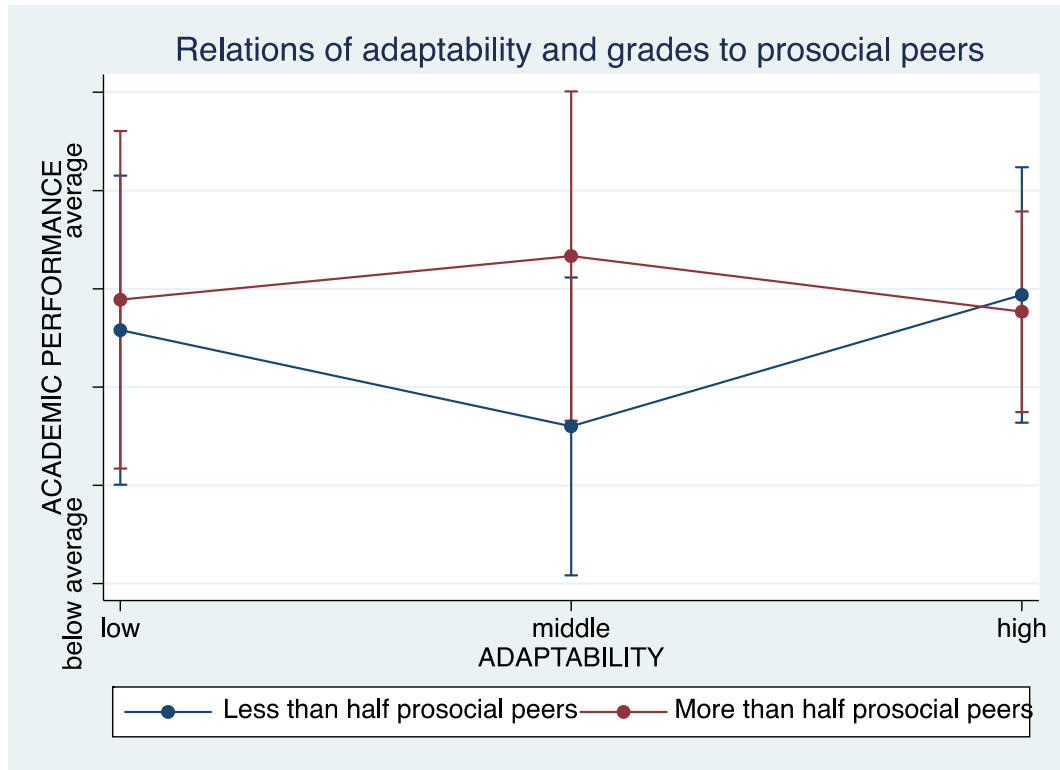
Figures 6.3 and 6.4. Relationship of Discipline and Academic Performance to Peer Association



Discipline: Overall, having more delinquent peers was associated with lower academic performance, regardless of the level of discipline reported by the caregiver. Having more than 50% of prosocial friends was associated with higher academic performance for low and high discipline, but not for moderate discipline. The relationship of the caregiver to the youth was not significant at Step 4. The percent variance explained by the model at Step 4 was 8.7% for both delinquent and prosocial peer association (corresponding to R^2).

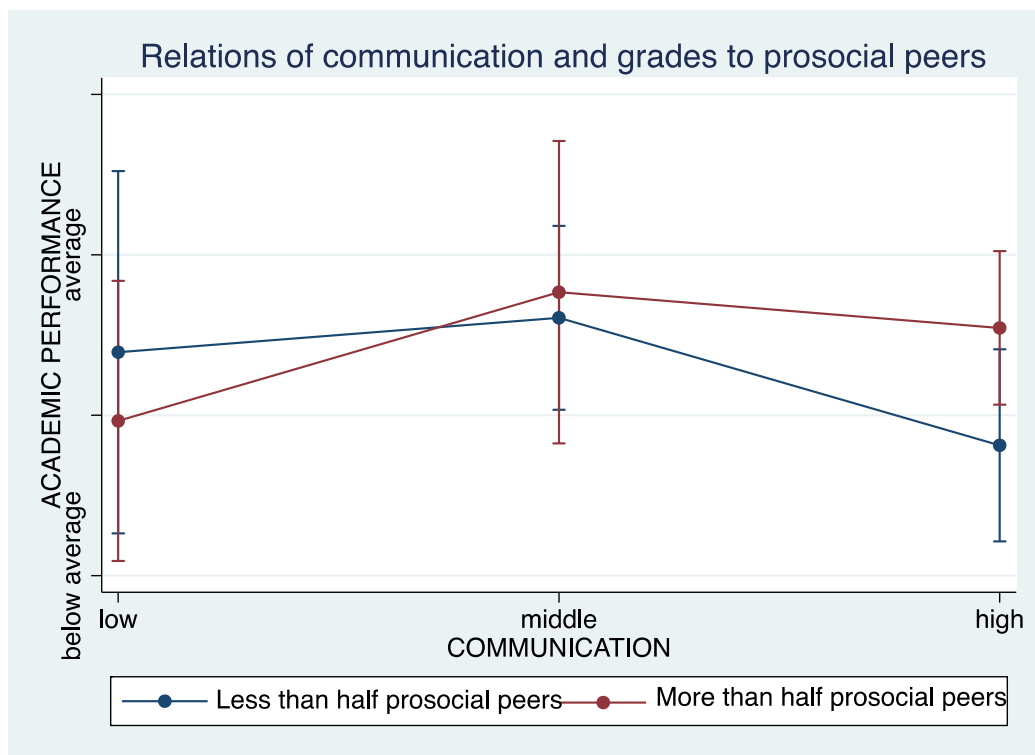
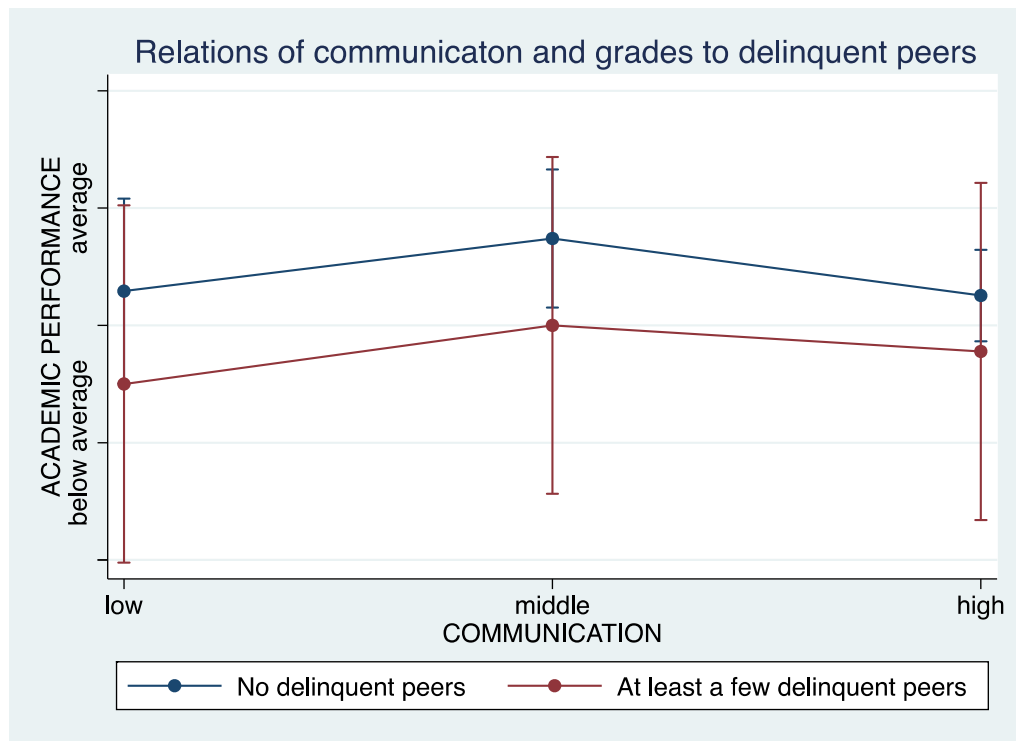
Figures 6.5 and 6.6: Relationship of Adaptability and Academic Performance to Peer Association





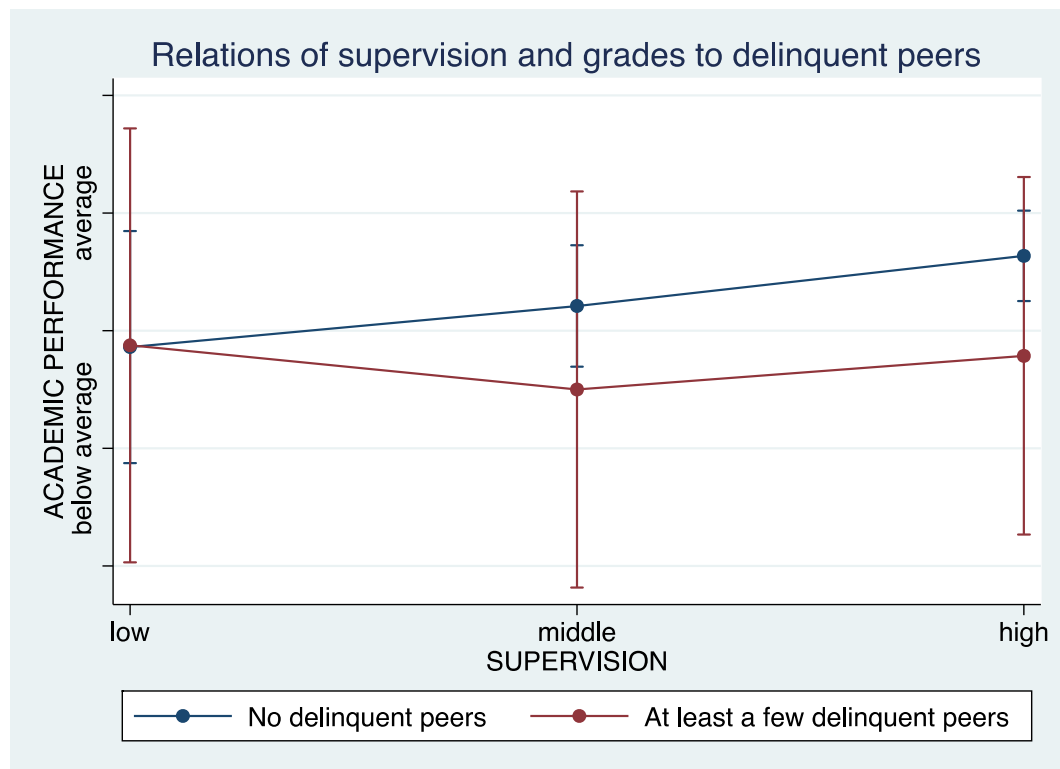
Adaptability: Associating with at least a few delinquent peers is associated with lower academic performance, regardless of the level of family adaptability. Likewise, having more than 50% of prosocial friends is associated with higher academic performance for all levels of adaptability. The gaps in the graphic are due to no participants with low adaptability and at least a few delinquent peers. The relationship of the caregiver to the youth (father versus mother) is significant at step 4. The R^2 at step 4 suggests that the model explains 7.1% and 7.4% of the variance in academic performance for delinquent and prosocial peer association respectively.

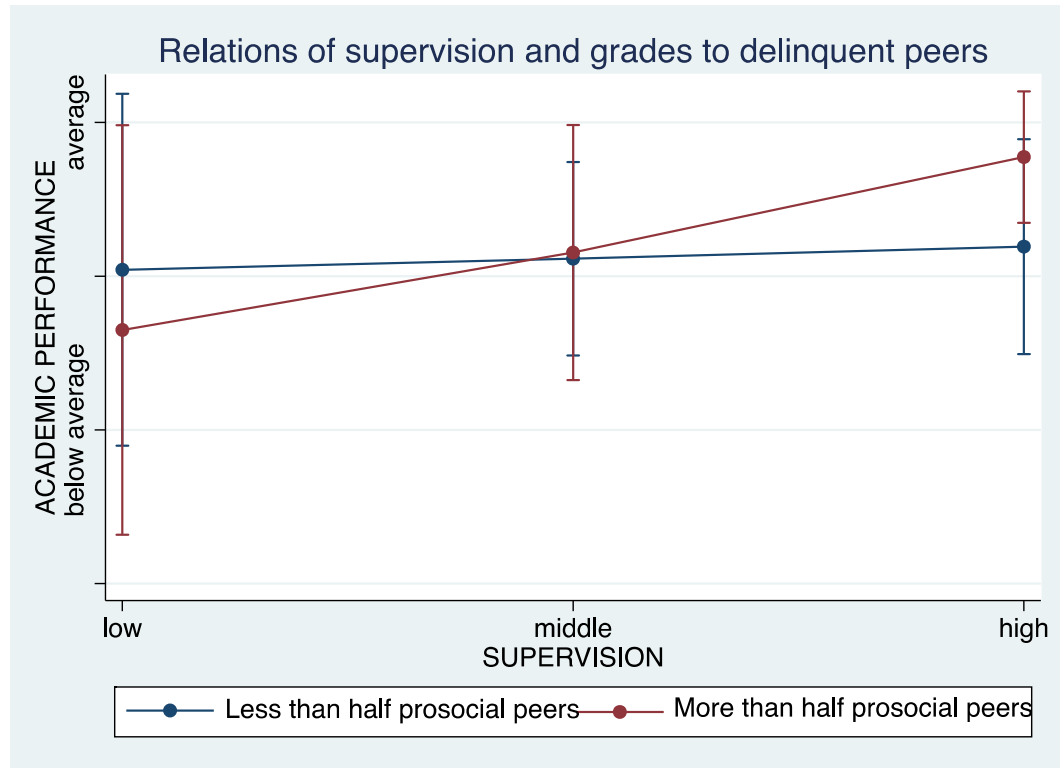
Figures 7.7 and 7.8. Relationship of Communication and Academic Performance to Peer Association



Communication: Associating with at least a few delinquent peers is related to lower academic performance, regardless of the level of parent-youth communication. Having more than 50% prosocial peers is related with higher academic performance when parent-youth communication is moderate and high. When communication is low, having prosocial peers does not improve academic performance. The relationship of the caregiver to the youth was not significantly related to academic performance at Step 4. The variance in communication explained by the predictor models was 7.4% and 9.0% when accounting for delinquent and prosocial peer association respectively.

Figures 7.9 and 7.10. Relationship of Supervision and Academic Performance to Peer Association





Supervision: Having at least a few delinquent peers is associated with lower academic performance, regardless of the level of parental supervision reported. Having more than 50% of prosocial friends is associated with higher academic performance when supervision is high, but is associated with lower academic performance when supervision is low. Having a father as a primary caregiver versus a mother is significantly associated with higher academic performance for both models (prosocial and delinquent peer association). At Step 4, the R^2 suggests that the models explain 8.6% and 9.0% of the variance in academic performance when considering the impact of delinquent and prosocial peers on the supervision-academic performance relationship.

Table 7.3. Variance in Academic Performance Explained by the Predictors at Each Step of the Hierarchical Regression Models

| | Communication | | Discipline | | Supervision | |
|----------------------------|----------------|--------------------|----------------|------------------|----------------|------------------|
| | R ² | F-value | R ² | F-value | R ² | F-value |
| Step 1: A → Y | 0.017 | F(2, 120) = 1.17 | 0.008 | F(2, 120) = 0.44 | 0.028 | F(2, 120) = 1.53 |
| Step 2: A + B → Y | 0.031 | F(3, 119) = 1.13 | 0.026 | F(3, 119) = 1.10 | 0.042 | F(3, 119) = 1.59 |
| Step 3: A + B + AB → Y | 0.032 | F(5, 117) = 0.80 | 0.052 | F(5, 117) = 0.91 | 0.047 | F(5, 117) = 1.04 |
| Step 4: A + B + AB + D → | 0.074 | F(7, 115) = 1.74 | 0.087 | F(7, 115) = 1.32 | 0.086 | F(7, 115) = 1.32 |
| | | | | | | |
| Step 1: A → Y | 0.017 | F(2, 120) = 1.17 | 0.008 | F(2, 120) = 0.44 | 0.028 | F(2, 120) = 1.53 |
| Step 2: A + C → Y | 0.027 | F(3, 119) = 0.96 | 0.017 | F(3, 119) = 0.72 | 0.034 | F(3, 119) = 1.39 |
| Step 3: A + C + AC → Y | 0.048 | F(5, 117) = 1.23 | 0.051 | F(5, 117) = 1.55 | 0.047 | F(5, 117) = 1.23 |
| Step 4: A + C + AC + D → | 0.090 | F(7, 115) = 1.88 | 0.087 | F(7, 115) = 1.85 | 0.090 | F(7, 115) = 1.46 |
| | | | | | | |
| | Cohesion | | Adaptability | | | |
| | R ² | F-value | R ² | F-value | | |
| Step 1: A → Y | 0.083 | F(2, 120) = 5.79* | 0.006 | F(2, 120) = 0.34 | | |
| Step 2: A + B → Y | 0.096 | F(3, 119) = 3.98** | 0.0236 | F(3, 119) = 0.72 | | |
| Step 3: A + B + AB → Y | 0.107 | F(5, 117) = 3.65** | 0.0312 | F(4, 118) = 0.56 | | |
| Step 4: A + B + AB + D → Y | 0.146 | F(7, 115) = 3.05** | 0.0710 | F(6, 116) = 1.35 | | |
| | | | | | | |
| Step 1: A → Y | 0.083 | F(2, 120) = 5.79* | 0.006 | F(2, 120) = 0.34 | | |
| Step 2: A + C → Y | 0.0917 | F(3, 119) = 3.96** | 0.0138 | F(3, 119) = 0.51 | | |
| Step 3: A + C + AC → Y | 0.0919 | F(5, 117) = 2.58* | 0.0282 | F(5, 117) = 0.57 | | |
| Step 4: A + C + AC + D → Y | 0.134 | F(7, 115) = 2.18* | 0.0738 | F(7, 115) = 1.36 | | |

A: one of five parenting practices (labeled at the top of the column), B: delinquent peer, C: prosocial peers, D: relationship of caregiver to youth, Y: academic performance

Discussion

The overall pattern of findings indicate that youth association with delinquent peers is related to lower academic performance, regardless of the level of the communication, family cohesion, discipline, adaptability and supervision. Similarly, youth association with prosocial peers is related to higher academic performance, regardless of the level of family cohesion and adaptability. The relationship between prosocial peer association and communication, supervision and discipline is less linear, and therefore it is more difficult to draw conclusions about these relationships. Since we did not find any significant interactions of the parenting by peer association terms, we present only observations of trends based on our data. More research is needed to draw cause-and-effect relationships.

Although this study remains exploratory, our results suggest that peers rather than parents may exert more influence over adolescent academic performance. Brown et al. argue that peers are unlikely to countermand parental influences, but they can reinforce parenting practices and family characteristics that are related to specific youth outcomes, such as academic performance (Brown et al., 1993). Whereas poor parenting may contribute to the youth's association with deviant peers, positive parenting promotes association with prosocial peers and better academic outcomes. The potential for peer groups to influence prosocial versus antisocial behaviors is especially strong during adolescence owing to the desire to conform to peer norms and find a social niche (Brown, 1989).

Of the five parenting practices explored in this study, only the family cohesion construct was significantly associated with youth academic performance. If the youth has strong relationships with prosocial peers, despite having been raised in a family with low cohesion, the positive impact of prosocial peers may compensate for poor family cohesion. According to Furman, cohesive social groups can promote norms and values that can either

undermine or facilitate school performance (Furman, 1989). As presented in chapter 3, family cohesion relates to the connectedness or separation of individuals within a family (Olson, 2000). Perhaps we can envisage broadening this definition to include connectedness to prosocial peers. In the absence of familial cohesion, having strong prosocial peer relationships may act as an effective surrogate. A future study could test if family cohesion and/or peer cohesion has a differential effect on academic performance.

Lastly, being raised by a father was significantly associated with higher academic performance compared to being raised by a mother, even after accounting for peer association (delinquent and prosocial peers), parenting practices (supervision, adaptability and cohesion) and their interactions (this was the only statistically significant result). Research suggests that by virtue of their gender and roles, mothers and fathers have different relationships and transmit different skills to adolescents (Larson, Richards, & Perry-Jenkins, 1994). Although our results suggest otherwise, Downey et al. found that children from single-father versus single-mother families do not differ with respect to academic performance (Downey, 1994). Adolescents tend to model behavior of the parent of the same sex (Laible & Carlo, 2004). Given that the vast majority of our sample is male (97.6%), our study participants may relate to male caregivers differently than they do to mothers, in particular during the adolescent years. Since only 15% of our sample of JSO had fathers as primary caregivers (versus 65% for mothers), we would need to confirm these results with a larger sample.

Limitations

Although this study presents the youth's association with delinquent and prosocial peers as separate, we acknowledge that most friendship networks are likely composed of both prosocial and delinquent peers (Haynie, 2002). Moreover, reports of delinquent and

prosocial peer affiliation were based solely on youths' reports. Participants were more likely to report association with prosocial peers than with delinquent peers, resulting in a skewed distribution of peer association that depressed the amount of variance in the data. We believe that response bias was an issue since 88% of youth report having no association with delinquent peers. It is probable that youth responded in a manner that they deemed socially acceptable or, alternatively, out of fear that more truthful answers might have negative consequences. We relied only on parent reports for parenting practices and youth academic performance. Although differences between youth and caregiver reports are unlikely to indicate that either version is right or wrong, each report reflects the informant's position (Upton, Lawford, & Eiser, 2008). Ideally, we would have integrated reports from both informants to strengthen the validity of our study.

Our study looked at the relationship of parenting practices, peer association and academic outcomes at one point in time. This implies that we cannot assess the temporality of our study variables, hindering our ability to discuss causal relationships. Future research could explore the longitudinal relationship of these variables to understand how parental influences on youth academic outcomes operate over time. Besides conducting this study longitudinally, it would also be beneficial to have a larger sample since there may be statistical power concerns when looking at interactions in small samples (Aiken & West, 1991). Finally, since we found no other study that looked at the relationship between five parenting practices, peer association and academic performance, our results remain preliminary. Studies that seek to replicate the results are warranted to validate the present findings.

Conclusion

Based on a social ecological approach (Bronfenbrenner, 1979), this study calls for an understanding of how parent and peer-level variables impact academic performance. Although this study remains exploratory, it appears that peers exert more influence over adolescent academic performance than caregivers. Prosocial peers may reinforce positive parenting practices, and perhaps even compensate for poor parenting. Similarly, engaging with delinquent peers may promote poor values and social norms, leading the youth to struggle academically. Since peer groups have such an important impact on academic performance, schools and parents should create opportunities for youth to foster positive prosocial interactions. Parents and teachers should support and supervise the youth's engagement in clubs, sports and peer mentorships programs, offering the youth the opportunity to interact with prosocial peers.

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CHAPTER 8: CONCLUSIONS

Overview

The objective of this dissertation was to understand how parenting practices influence the academic performance of juveniles who sexually offend, while considering history of youth victimization, peer association and general delinquency. This research utilized cross-sectional data from 127 juveniles who sexually offended and their caregivers. Aim 1 used regression analyses to determine if parenting practices differed by characteristics of the caregivers of JSO. Aim 2 tested mediation and moderation analyses to understand how history of victimization and peer association affected the relationship between parenting and general and school delinquency. Using hierarchical regression models, aim 3 examined the interactions of parenting practices with peer association to assess the effect on academic performance.

Discussion of Findings

Aim 1: We compared youth versus caregiver reports of parenting practices. Caregiver and youth reports showed little agreement as suggested by the Wilcoxon signed rank test and the intra-class correlation (ICC) test. Comparisons of caregiver and youth reports reveal that mean scores for cohesion, communication and supervision were slightly higher for caregiver reports, as compared to youth reports. Parent reports were slightly more reliable, based on Cronbach's alpha and more consistent than youth reports, based on descriptive statistics showing trends in responses. We concluded that youth and caregiver reports captured different information, but decided to use caregiver reports for future

analyses since our goal was to make recommendations for improved parenting practices to facilitate the successful reintegration of JSO into the school system.

The multivariate regression analyses revealed that living with a single parent was significantly associated with lower scores for cohesion and supervision when compared to a youth raised in a two-parent household, and higher caregiver education was significantly associated with better cohesion and communication. We also found that being reared by a foster parent or non-parental relative (as compared to a mother) was associated with more discipline. Additionally, younger caregivers (as compared to old caregivers) reported better communication skills with JSO. Recommendations for improving parenting practices will need to consider the demographic make-up of families of JSO.

Aim 2: We found that history of youth victimization moderated the relationship between supervision and general delinquency. Experiencing two or more types of abuse (physical, sexual and/or emotional) versus no abuse increased the likelihood of committing general delinquent offenses seven-fold when controlling for supervision, relationship of caregiver to youth and family structure.

Aim 3: Review of our data revealed that association with delinquent peers mediated the relationship between family cohesion and general delinquency. Having more deviant friends was associated with an increased likelihood of committing delinquent offenses whereas having more prosocial friends was associated with committing fewer delinquent offenses. In this study, family cohesion was indirectly associated with non-sexual delinquency via peer association. In the absence of a cohesive home environment, the youth will be more likely to establish strong connections with peers. In turn, the type of peer that the youth befriends (prosocial versus delinquent) has a direct impact on the likelihood of committing a non-sexual offense.

Aim 4: We conducted a series of hierarchical multiple linear regressions to assess relations of parenting and peer association on academic achievement. We found that high family cohesion was significantly associated with better youth academic performance. Other analyses did not reveal any significant interactions of the parenting practices by peer association terms. However, the overall pattern of findings suggest that youth association with delinquent peers was associated with lower academic performance, regardless of the level of the communication, family cohesion, discipline, adaptability and supervision. Similarly, youth association with prosocial peers was associated with better academic performance, regardless of the level of family cohesion and adaptability. If the youth has strong relationships with prosocial peers, despite having been raised in a family with low cohesion, the positive impact of prosocial peers appears to compensate for poor family cohesion. Our results suggest that being reared by a father versus a mother was significantly associated with better academic performance. However, this association dissipated when we accounted for peer association. It appears that peers, rather than parents, exert more influence over the youth's academic performance.

Scope of Findings in Relation to Prior Research

The literature on the relationships between parenting practices, victimization history, peer association, general delinquency and academic performance of JSO is scant. As a consequence, for much of this dissertation, we referred to the literature on general juvenile offenders. For aim 1, we built on the work of Graves and colleagues (Graves, Openshaw, Ascione, & Erickson, 1996) to examine the association between parental characteristics and parenting practices to better understand how family factors are related to JSO. Consistent with the work by Graves et al. (1996), our sample revealed that a significant percentage of JSO, formally identified as such by law enforcement officials, come from single-parent

families (46.46%), most often headed by a female caregiver. We presume that two-parent households have more resources (both in terms of time available and income) with which to keep youth out of the juvenile justice system. While aware of the risk of over-generalization, our results suggest that demographic characteristics (non-parental living arrangements, single-family households) are affecting parenting practices of JSO.

For aim 2, we referred to the literature on risk and protective factors for juvenile offending (Caldwell, 2010; Carr & Vandiver, 2001; Farrington, 2003; Hanson & Bussiere, 1998; Loeber & Farrington, 2000) and JSO (Miner, 2002; Van der Put, Van Vugt, Stams, Dekovic, & Van der Laan, 2013). To the best of our knowledge, our study is the first to look at the moderating role of youth victimization history on the parenting-delinquency relationship in a sample of JSO. Similarly, no other study has tested whether delinquent peer association mediates the relationship between parenting and juvenile non-sexual delinquency of JSO. Although our study explored new territory in the field of juvenile sexual offending, given the small sample size, research to replicate and extend the findings are warranted to further our understanding of how history of victimization and peer association impact the parenting-delinquency relationship.

Only one study has looked at the family, peer and school contexts of juvenile sexual offending to-date (Ronis & Borduin, 2007). We identified one study on the topic of school reintegration of juvenile sex offenders (Richardson, DiPaola, & Gable, 2012). As this research is only emerging, little is known about academic outcomes of JSO. Overall, our study reveals that JSO have below average academic performance and that peer association seems to have a greater impact on academic performance during adolescent years when compared to parenting practices. Implications for intervention and policy will be discussed in a later section.

Limitations

This dissertation considered individual, peer, family and school level variables, attempting to understand the complexity of juvenile sexual offending in the context of reintegration. The five main limitations of this study are presented below. Despite these limitations, this dissertation explored new territory by highlighting individual, family, peer and school-level variables among juveniles who sexually offend. We hope that this work will start a dialogue about ways for families and schools can to contribute to the reintegration of JSO into the school system and into society more broadly.

Sample size: The small sample size ($n=127$) limits the power to detect relationships. The negative findings reported in aim 3 (lack of significant interactions between peer association and parenting practices) should be interpreted with caution until other studies with larger sample size can validate these results. For this reason, we were careful to discuss trends in the data for aim 3 rather than associations.

Study validity: The validity of our study could have been strengthened had we used multiple informant reports for our study variables. We integrated information from both caregivers and youth to assess history of victimization, but relied only on parent reports for parenting practices. Differences between youth and caregiver reports are unlikely to indicate that either version is right or wrong, rather, each report is a reflection of the informant's position (Upton, Lawford, & Eiser, 2008). A sizable body of literature suggests that self-reports of juvenile delinquency may be superior to official police reports (Krohn, Thornberry, Gibson, & Baldwin, 2010). Nonetheless, we focused on the caregiver's understanding of his/her parenting practices rather than relying on the youth's perception of

parenting skills since the ultimate objective of this study was to make recommendations for improved parenting practices. We also utilized caregiver reports of the youth's academic performance because we assume that caregiver reports are more objective (given that they receive the youth's report cards) and there was two times less missing data for caregiver reports. Along the same lines, peer association and self-reported delinquency were based solely on youth reports. We suspect that both delinquent peer association and self-reported delinquency were understated, and that these measures were subject to social desirability bias.

Generalizability: Our sample was composed of 97.6% ($n = 124$) male adolescents, and therefore the results of this study are only applicable to male juveniles who sexually offend. We ran all analyses with the 3 female JSO participants enrolled in the study but we were unable to draw any conclusions about female JSO given the small sample size and the imbalanced male to female ratio (124:3). Additionally, our study results cannot necessarily be generalized to juveniles who commit non-sexual offenses, thus limiting the external validity of our study. Although JSO share many characteristics with other juvenile delinquents, there is no literature comparing the parenting practices of caregivers of JSO formally involved in the juvenile justice system with caregivers of non-sex offenders.

Temporality: Since our data was cross-sectional, we were unable to discuss the temporality of the variables assessed in this study. As a consequence, this dissertation does not clarify causal relationships theorized in the overarching conceptual framework. This calls for longitudinal research to explore the pathways between our study variables.

Limited school variables: Finally, we would have liked to explore more school variables related to JSO such as truancy, school suspension, expulsion and dropout. Although some of these variables were available in the dataset, they were isolated variables and were not assessed using well-validated instruments. The reason for this being that the

original study was designed as a randomized controlled trial to assess the effects of multisystemic therapy versus treatment as usual. The study was not specifically designed to look at school outcomes of JSO.

Implications for School Reintegration of JSO

This section presents some possible implications for school reintegration of JSO based on the findings from our study. We will discuss the implications of school re-entry in terms of family cohesion, supervision, youth victimization history and peer association.

Family cohesion: We found that family structure was significantly associated with family cohesion, thus we have to account for non-traditional family arrangements (non-parental relatives, single-parents) when developing programs to help JSO and their families. Single parents have less time available to spend with the youth (Astone & McLanahan, 1991), and are more likely to struggle financially (Carlson & Corcoran, 2001). One way to support single parents is to teach them to reach out to a larger network of neighbors, friends and extended family. The notion of community parenting is gaining in popularity. An article by Kessler describes how youth can benefit from a more-than-two-parent family, including having more adults with financial and emotional ties to a child (Kessler, 2007). Having additional adults caring for youth can potentially increase connection and cohesiveness, often found to be lacking in families of JSO.

This study also highlights a need for greater family inclusion in the assessment, treatment and rehabilitation process of JSO in order to facilitate school reintegration. Several important findings for those working with JSO and their families emerge from this study. First, family cohesion is directly associated with youth delinquency and any intervention designed to improve school integration should focus on improving family cohesion. Complex treatments such as multisystemic therapy show great promise in impacting

individual, peer, and family-level variables in samples of juvenile offenders. In a study by Huey and colleagues (2000), MST was found to decrease delinquent behaviors via improved family cohesion and decreased delinquent peer affiliation (Huey, Henggeler, Brondino & Pickrel, 2000).

Supervision: Findings from our study suggest that supervision is often lacking in families of JSO. Not surprisingly, this lack of supervision is associated with youth victimization history, association with deviant peers and poor academic performance. Even under the best of circumstances, a caregiver's ability to directly supervise the youth diminishes over time as the youth becomes more independent, social (e.g. spends more time with peers) and mobile (e.g. starts driving). A study by Pettit and colleagues (2001) found that better parental monitoring was associated with youth committing fewer delinquent offenses (Pettit, Laird, Dodge, Bates & Criss, 2001). This same study found that since delinquent behavior is considered "normative" for boys, caregivers grant boys more leeway and often supervise boys less than girls. This is problematic because lower parental supervision is associated with an increased likelihood of adolescents' delinquent offenses, as suggested by our study.

In sum, caregivers need to provide more supervision during adolescents, either by themselves or in conjunction with other responsible adults. They may need to resort to alternative means of supervision such as voluntary self-disclosure from youth about their activities and whereabouts (Stattin & Kerr, 2000). Relying on the youth to provide honest information about his/her activities requires the caregiver and youth to develop a trusting relationship. This is particularly true when if the youth has been the victim of some type of abuse. We found a significant association between lack of supervision and victimization history.

History of victimization: Our results demonstrate a 7-fold increase in the likelihood of committing a non-sexual offense when the youth has experienced poly-victimization (i.e. experienced at least two types of abuse). This highlights the need to target families of youth who have been victimized and examine the correlates between parenting practices and youth maltreatment. We should sensitize and instruct family members and school staff to identify signs of victimization and low parental supervision to support the youth and possibly prevent future delinquency. Help in the form of therapy may also be recommended for youth who have been victimized. Future studies should evaluate the impact of interventions focusing on mental health outcomes of victimized youth. We might also consider exploring if evidenced-based interventions such as trauma-focused cognitive behavioral therapy can reduce the risk of future sexual and non-sexual offending.

Peer association: Our study provided some insight into ecological factors that might influence a youth's academic performance, highlighting the importance of family and peer contexts. We found that academic performance was adversely impacted when youth associated with delinquent peers and higher when youth associated with prosocial peers. Dishion and colleagues argue that the tendency of schools to group youth according to their academic skills is exacerbating the relationship between academic failure and delinquent peer involvement (Dishion, Patterson, Stoolmiller, & Skinner, 1991). Youth exhibiting both problem behaviors and academic deficits may find themselves in a classroom with peers who have similar profiles, thus reinforcing negative outcomes. We recommend the use of interventions that help parents effectively alter the youth's peer associations from delinquent to prosocial. Evidence-based interventions, including MST have shown success in promoting positive peer relations by using academic mainstreaming and encouraging youth to engage in sports (Borduin et al, 1990).

Future Studies

We would like to make some suggestions for studies that could build on this dissertation. Most pressing, we recommend conducting a study of academic outcomes (including absenteeism, poor performance, discipline problems, suspension/ expulsion and school dropout) in a sample of juveniles who sexually offended. In a meta-analysis, Maguin and Loeber describe how poor academic performance predicts delinquency (Maguin & Loeber, 1996). Specifically, poor academic performance fosters problematic behaviors in the classroom (Katsiyannis, Ryan, Zhang, & Spann, 2008), which in turn can lead to disciplinary actions such as school suspension and/or expulsion (Gottfredson & Gottfredson, 2001). Being removed from the classroom setting interferes with academic progress and perpetuates the failure cycle, leading to lost opportunities to gain critical academic skills and develop appropriate social skills (Costenbader & Markson, 1998). Moreover, school suspension has been associated with increased school dropout rates, once again reducing the chances that the youth will succeed either academically or professionally (Christle, Jolivette, & Nelson, 2007; Christle et al., 2004; Skiba & Noam, 2001). We believe that understanding the academic challenges that the JSO is faced with is critical to tailor transition programs to help the JSO succeed post-release.

We also encourage researchers to assess the effect of stigmatization of JSO on youth academic outcomes. The stigma associated with the registration and notification of juveniles who sexually offend affect the school experience of JSOs in a number of ways. First, notifying schools about an enrolled JSO increases stigmatization of the youth (Lowe, 1997), making it more likely that peers will ridicule and bully the JSO (Trivits & Reppucci, 2002). The label of “sexual offender” subjects the youth to prejudice and ultimately denies him/her opportunities (Garfinkle, 2003). Second, parents may protest the presence of a JSO in their

child's school, pressuring the JSO to switch to an alternative school and potentially compromising the quality of education (Lowe, 1997; Trivits & Reppucci, 2002). Since schools are not provided guidelines on how best to use the notification information, many schools find it easier to remove JSOs from the classrooms rather than to deal with pressure from parents (Lowe, 1997). Understanding how JSO-related stigmatization affects academic outcomes could inform training for school staff on how to deal with stigmatization within school grounds and school policies regarding transitioning JSO back into classrooms.

Recommendations

This dissertation calls for a collaboration between families and schools to help JSO succeed academically. School success is a stepping-stone towards the youth's successful reintegration into the community. When youth fall behind academically, they are more likely to dropout of school, thus perpetuating the cycle of school failure and delinquency. In turn, school dropout has devastating social and economic consequences for students, their families and communities (Christle, Jolivette & Nelson, 2007). Specifically, school dropout is associated with unemployment, low incomes and reliance on public assistance, delinquency, imprisonment and drug use (Alexander, Entwisle, & Horsey 1997; Battin-Pearson et al., 2000; Krohn, Thornberry, Collins-Hall, & Lizotte, 1995). This section will make some initial recommendations based on the study results for the school re-entry of JSO.

Parental program: Our study has highlighted the relevance of parenting practices in the context of juvenile sexual offending. Based on our results, we would like to recommend that public health professionals develop a parental training program in collaboration with clinicians and teachers. This training program, offered within the school setting, would be open to caregivers of JSO who are reintegrating school, and would start when the youth re-

enrolls into school following adjudication. According to Chung and colleagues, quick and smooth reintegration is important because the lack of structure and support from school, families and the community could jeopardize the chances of the youth's successful reintegration (Chung, Schubert, & Mulvey, 2007). The program could include improving parenting practices and developing a rapport with the youth. Caregivers could be taught about their influence on youth behaviors by supervising and screening adolescents' peer affiliations. Such a training program might include exploring techniques to enhance cohesion, improve supervision, and to foster sensitivity to the needs and interests of the child, and could provide guidance to the caregiver in order to ensure that they make the best use of the limited amount of time available for their children, thus enhancing attachment bonds. The program could teach caregivers to contribute to the youth's schooling to the best of their abilities (e.g. help with homework). Lastly, this program could assist with providing concrete skills for improving coping mechanisms to deal with the stigma associated with the label of "sex offender".

Transition program for youth: It is exceedingly difficult for former delinquents to succeed academically after being released from the juvenile justice system (Abrams, 2007). Based on the overall low academic performance of JSO in our study, we recommend that all re-entering juvenile offenders (whether sexual or non-sexual offenders) participate in facility-to-communication transition programs. A study by Bullis, Yovanoff and Havel (2004) found that transition programs help youth stay engaged with work and/or school, while receiving needed mental health services (Bullis, Yovanoff & Havel, 2004).

This transition program could be offered in parallel to the parental training program, and could focus on academic achievement, developing life skills and employment preparation. Such a transition program for JSO may also facilitate the youth's involvement in

prosocial activities (e.g. sports) with non-offending peers. As we have shown in our research, prosocial peers can have a positive influence on academic performance of youth. For youth with disabilities, or with serious academic problems, there could be special education services for these youth to help them complete their coursework. Since the 1980s, the federal Office of Special Education has implemented a “Transition Initiative” for youth with disabilities (Will, 1984). This transition program offers special services to youth with disabilities that qualify them for special educational services.

Research on the specific issues that affect school re-entry of delinquent youth and juveniles who sexually offend specifically would help inform the development and implementation of transition programs that could assist the youth in obtaining an appropriate education. However, research alone will not solve the problem – changes within schools need to occur to facilitate the transition from prison to school. Juvenile and educational systems are discordant, and the lack of coordination is harming delinquent students and exacerbating the school-to-prison pipeline (Wald & Losen, 2003).

Multisystemic therapy (MST): We recommend that MST be deployed in a future study in order to enhance our understanding of the relationships between parenting practices, youth victimization history, peer association and the academic performance of JSO. MST has been successfully used to address risk factors for sexual abusive behaviors across individual, family, peer, school, and neighborhood domains by working with caregivers and other influential people in the youth’s social ecology (Borduin et al., 2009). A central tenet of MST is to develop parenting competencies, or to surmount barriers to achieving these competencies such as drug problems or poor social support. Under the aegis of trained therapists, caregivers are taught to help the youth address emotional, behavioral, peer, and

school difficulties (Henggeler et al., 2009). MST targets academic problems when they appear to be related to sexual offending or when they interfere with treatment. When this is the case, caregivers are instructed to monitor and promote the youth's academic performance through improved communication between parents and teachers, restructured after-school activities and encouragement of the youth's academic efforts (Borduin et al., 2009). Results are promising: MST with JSO has been shown to improve family and peer relations and improve the youths' grades in core academic subjects (Borduin et al., 2009).

In sum, understanding how parenting practices, peer association and history of victimization affect academic outcomes of juveniles who sexually offend is essential to inform broader efforts to reintegrate JSO into schools post-release. This dissertation underscores the need to address individual, peer, family and school-level contexts of juvenile sexual offending. We believe that multisystemic therapy offers a comprehensive framework to tackle the complexities of juvenile sex offending. We recommend further developing and evaluating multisystemic therapy interventions to help parents of JSO acquire new and improved parenting practices within the specific context of juvenile sexual offending with the potential to improve youth academic outcomes.

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- Young, C. (2008). Children sex offenders: How the Adam Walsh child protection and safety act hurts the same children it is trying to protect. *New England Journal on Crime and Civil Confinement*, 34, 459.
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APPENDIX: CURRICULUM VITAE

MAYA NADISON

EDUCATION

Doctor of Philosophy (PhD) in Mental Health June 2014

Johns Hopkins Bloomberg School of Public Health - Baltimore, MD

- Predoctoral Training Grant in Education Research, The Institute for Education Sciences

Certificate in Education Sciences June 2014

Johns Hopkins University School of Education - Baltimore, MD

Master of Health Science (MHS) in Mental Health May 2009

Johns Hopkins Bloomberg School of Public Health - Baltimore, MD

- Merit scholarship recipient

Certificate in Health Communication May 2009

Johns Hopkins Bloomberg School of Public Health - Baltimore, MD

Bachelor of Arts (BA) June 2007

Northwestern University - Evanston, IL

- *Ad Hoc* major in Medical Humanities
- Second major in Art Theory and Practice
- Graduated with Honors

LANGUAGES

- Trilingual (English, French, Hebrew)
- Proficient in German, Italian and Russian

PROFESSIONAL EXPERIENCE

Program Evaluator June 2014 - Present

Kaiser Permanente Educational Theater Program – Beltsville, MD

- Monitoring and evaluating educational theater programs

RESEARCH GRANTS

Global Health Established Field Placement Aug. - Oct. 2013

Johns Hopkins Center for Global Health - Lilongwe, Malawi

- Developed an eToolkit to summarize best practices for HIV prevention in the Malawian context
- Designed fact sheets for various program components
- Conducted qualitative interviews to collect success stories
- Contributed to an end-of-project report for USAID and local collaborators

Albert Schweitzer Fellowship May 2012 - May 2013

University of Maryland and Johns Hopkins University - Baltimore, MD

- Designed and implemented a school-based sexual abuse prevention program using puppetry
- Co-led weekly workshops on sexual abuse prevention with the Baltimore Child Abuse Center
- Coached a student sexual abuse prevention program using a peer education model

Johns Hopkins Urban Health Institute

Aug. 2011 - Aug. 2012

Community Small Grant Award - Baltimore, MD

- Created an original sexual abuse prevention program with the Baltimore Child Abuse Center
- Developed a curriculum for weekly lessons on sexual abuse prevention

Summer Research Grant

June – Aug. 2006

Northwestern University - Tokyo, Japan

- Adapted an original anti-bullying campaign using puppetry for Japanese youth
- Explored novel approaches to communicating culture-specific health messages to children

Summer Research Grant

June – Aug. 2005

Northwestern University - Evanston, IL

- Designed and implemented an outreach program using puppetry to sensitize youth to bullying
- Hired and directed actors who performed at hospitals and schools around Chicago, IL
- Developed a model for child health theater using puppetry

Undergraduate Success in Science Program

June – Aug. 2003

Northwestern University - Evanston, IL

- Created an educational booth to raise awareness of the problem of lead poisoning in Chicago
- Collected and analyzed soil samples for mapping of lead levels in Chicago neighborhoods

RESEARCH EXPERIENCE

Graduate Research Assistant

Nov. 2008 – Aug. 2012

Johns Hopkins Bloomberg School of Public Health - Baltimore, MD

- Created a database of organizations worldwide offering health services to victims of torture
- Conducted literature reviews and wrote sections of manuscripts for publication
- Translated documents from French for a study on sexual violence against women in Congo
- Prepared mid-year reports for USAID

Graduate Research Assistant

Sept. 2011 – Aug. 2012

Johns Hopkins University and the Sheppard Pratt Health System - Baltimore, MD

- Helped design professional development series for educators on cultural proficiency
- Conducted qualitative interviews with teachers and school administrators
- Collected observational data on student behaviors in the classroom

Graduate Research Assistant

Sept. 2010 – Aug. 2011

Johns Hopkins Center for Prevention and Early Intervention - Baltimore, MD

- Administrative support for a school-based program aimed at reducing disruptive behaviors
- Conducted peer nomination interviews with middle-school students

TEACHING EXPERIENCE

Teaching Assistant

Oct. - Dec. 2011/ Oct. - Dec. 2012

Johns Hopkins Bloomberg School of Public Health - Baltimore, MD

- Class entitled: “Issues in mental health research in developing countries”
- Graded written assignments and managed online course website

Sexual Education Teacher

Jan. – April 2012

Community Adolescent Sexual Education - Baltimore, MD

- Taught weekly sexual education classes to inner-city Baltimore middle-school students

Summer Teacher

June – Aug. 2010

Higher Achievement Program - Baltimore, MD

- Taught literature and puppetry to inner-city Baltimore youth
- Used theater to promote literacy in the classroom

French Teaching Assistant

Aug. 2003 - June 2004

Northwestern University - Evanston, IL

- Conducted teaching sessions in French for undergraduate students
- Prepared weekly lesson plans and graded students' papers

PUBLICATION

- Bass J, Poudyal B, Tol W, Murray L, Nadison M, Bolton P (2011). A controlled trial of problem-solving counseling for war-affected adults in Aceh, Indonesia. *Social Psychiatry and Psychiatric Epidemiology*, 47(2):279-91.

PRESENTATIONS

- Aung W, Moldovan R, Shannon K, Peters J, Redstone L, An S, Duong J, Koegler E, Nadison M, Pronovost PJ, Aslakson RA (March, 2013). *Intensive care unit nurses and palliative care: perceptions and recommendations*. Poster presentation at the American Academy of Hospice and Palliative Medicine/Hospice and Palliative Care Nurses Association national meeting in New Orleans, LA.
- Nadison M (October, 2012). *A sexual abuse awareness program using puppetry for Baltimore middle-school students*. Poster presentation at the Annual Conference of the Association for the Treatment of Sexual Abusers, Denver, Colorado.
- Shannon K, Peters J, Redstone L, An S, Aung W, Duon J, Koegler E, Nadison M, Pronovost PJ, Aslakson RA (October 2012). *Perceptions of the terms "palliative care" and "palliative medicine" amongst surgical ICU nurses, surgeons, and critical care anesthesiologists*. Poster presentation at American Society of Anesthesiology meeting in Washington DC.
- Murray L, Bass J, Nadison M, Bolton P (November 2011). *Selecting and implementing appropriate interventions for non-western low-resource contexts*. Poster presentation at the Sixth World Conference on the Promotion of Mental Health and Prevention of Mental and Behavioral Disorders, Washington, DC.
- Nadison M (March 2011). *L'tle Grain and the Sea Bully: an anti-bullying campaign using puppetry*. Oral presentation at the NYU Forum on Theater for Public Health, New York, NY.

COMMUNITY SERVICE

Advocates for Survivors of Torture and Trauma - Baltimore, MD (March – Aug. 2011)

- Simultaneous translation (from French) during therapy sessions with victims of torture

Medical Mission to Colombia - Cali, Colombia (March 2010)

- Used art therapy with children at the Cancino hospital, Cali

Project HOPE - Baltimore, MD (Jan. 2009 - April 2009)

- Volunteered with homeless individuals afflicted by mental illness

Children's Memorial Hospital - Chicago, IL (Aug. 2007 - July 2008)

- Intern in child psychiatry

Humanitarian Mission - Kiev, Ukraine (March 2007)

- Volunteered at old-age home in Kiev, Ukraine

Schneider Children's Medical Center - Petach Tikva, Israel (June 2004 - Aug. 2004)

- Used art therapy with adolescents suffering from eating disorders